

RF/ER-94-0012.UN



DOE-RFFO Environmental Restoration Program

Monthly Report for September 1994



October 20, 1994

ADMIN RECORD

A-SW-001273

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EXECUTIVE SUMMARY

SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR SEPTEMBER 1994

The regulatory agencies granted approval for the Operable Unit (OU) 1 Proposed Action Memorandum for the Hot Spot Removal process on September 22, 1994. The hot spot field work commenced on September 26, 1994, and the hot spot removal was completed on September 30, 1994.

In OU 3, the trenching operations and the installation of the electrical line and the concrete pads for two of four air and meteorological monitoring stations were completed in September 1994. Documentation photographs of the two constructed air and meteorological monitoring stations were taken on September 5, 1994. Construction operations will begin at the remaining two monitoring station sites once the Jefferson County Site Approval Applications for both sites are processed by the County.

On September 26, 1994, the OU 3 Final Chemicals of Concern Identification Technical Memorandum (TM) #4 and the CDPHE Conservative Screen Letter Report were submitted to the regulatory agencies for review. This submittal is approximately 30 days ahead of the regulatory agency approved project schedule delivery date of October 20, 1994.

The OU 4 Final Phase II RFI/RI Work Plan was submitted to the regulatory agencies on September 2, 1994.

The 904 Pad repack container contract was awarded on September 14, 1994. The delivery of the first containers is expected in October 1994.

The OU 7 TM, *Revised Work Plan*, was submitted to the regulatory agencies on September 8, 1994. This document satisfied two Table 6 Interagency Agreement (IAG) milestones: the Phase I Resource Conservation and Recovery Act (RCRA) Facility Investigation/Remedial Investigation (RFI/RI) Report and the Phase II RFI/RI Work Plan.

Approval was received from the CDPHE for the extension of two OU 11 milestones. The milestones and their extension dates are as follows:

<u>Milestone Name</u>	<u>Original IAG Due Date</u>	<u>Approved Extension Date</u>
Submit Draft Phase I RFI/RI Report	September 20, 1994	July 20, 1995
Submit Final Phase I RFI/RI Report	February 22, 1995	September 19, 1995

The Industrial Area Interim Measure/Interim Remedial Action (IM/IRA) document was submitted for public comment in August 1994, and the document was presented at a public meeting on September 21, 1994.

The Corrective Action Decision/Record of Decision for OU 16 was signed by DOE and submitted to the EPA and the CDPHE for signatures.

LAG PERFORMANCE INDICATORS FOR MONTHLY REPORT

<u>Number of IAG Table Six Milestones to Date</u>	<u>Current FY 94 (10/1/93 - 9/30/94)</u>	<u>Since IAG Inception</u>
Scheduled (including approved extensions)	24	127
Met	11	97
Extensions Granted	2	49
Extensions Denied	8	8
Remaining this FY 94 (to 9/30/94)	3	n/a
Added	0	8
Deleted	0	4

<u>Deliverables in Review by Regulators</u>	<u>Project</u>	<u>Date Submitted</u>
	Revisions to OU 1 Phase III RFI/RI	15 Jun 94
	OU 2 Draft Phase II RFI/RI Report	16 Dec 93
	OU 4 Draft Proposed Phase I IM/IRA Decision Document	27 May 94
	OU 4 Draft Phase II RFI/RI Work Plan	27 May 94
	OU 4 Final Phase II RFI/RI Work Plan	02 Sep 94
	OU 15 Draft Phase I RFI/RI Report	25 Jul 94

IM/IRA Status

OU 1 881 Hillside Treatment
 OU 2 903 Pad Water Treatment
 OU 4 Water Management Tasks (Interceptor Trench
 System and Pond Water)

Gallons Treated

2,631,616 gallons
 24,791,806 gallons
 4,247,208 gallons

<u>IAG Document Deliverables Due Next Six Months</u>	<u>IAG Approved Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 1 Corrective Design/Remedial Design Work Plan	01 Nov 94	29 Dec 96	Extension date to be determined
OU 1 Draft Proposed Plan	22 Nov 94	12 Dec 94	On schedule
OU 1 Final Corrective Measures Study/Feasibility Study Report	22 Nov 94	22 Nov 94	On schedule
OU 1 Final Proposed Plan	24 Feb 95	07 Feb 95	On schedule
OU 2 Draft Corrective Action Decision/Record of Decision	16 Mar 95	02 Dec 98	
OU 2 Draft Responsiveness Summary	13 Dec 94	25 Aug 97	
OU 2 Final Responsiveness Summary	16 Mar 95	02 Dec 98	
OU 4 Final Phase I IM/IRA Decision Document and Final Responsiveness Summary	25 Feb 95	25 Feb 95	
OU 4 Final Phase II RFI/RI Work Plan	07 Sep 94	07 Sep 94	
OU 4 Final Interim Measure Title II Design	10 Feb 94	10 Feb 95	
OU 4 All Solar Ponds Emptied of Water and Sludge	20 Jan 95	15 Dec 94	Ahead of schedule
OU 4 IM/IRA Responsiveness Summary	25 Jan 95	To be determined	In dispute resolution

<u>IAG Document Deliverables Due Next Six Months</u>	<u>IAG Approved Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 7 Draft Phase I Proposed IM/IRA Decision Document	01 Nov 94 ¹	01 Nov 94	On schedule
OU 7 Landfill Leachate Collection Proposed Action Memorandum	13 Oct 94	13 Oct 94	On schedule
OU 9 Final Phase I RFI/RI Report	06 Sep 94	07 Sep 94	Extension denied
OU 9 Draft Phase II RFI/RI Work Plan	10 Mar 95	23 Jul 04	
OU 10 Final Phase I RFI/RI Report	30 Jan 95	19 Jul 16 ²	
OU 11 Final RFI/RI Report	22 Feb 95 ¹	19 Sep 95	
OU 12 Final Phase I RFI/RI Report	15 Sep 94	17 Nov 99 ²	
OU 13 Final Phase I RFI/RI Report	11 Jan 95	02 Dec 99 ²	
OU 14 Draft Phase I RFI/RI Report	20 Dec 94	13 Feb 01 ²	
OU 15 Final Phase I RFI/RI Report	04 Jan 95	04 Jan 95	On schedule
SW Industrial Area Draft Responsiveness Summary	02 Nov 94	02 Nov 94	On schedule
SW Industrial Area Final Responsiveness Summary	23 Aug 94	23 Aug 94	On schedule
SW Industrial Area Final Decision Document	23 Aug 94	23 Aug 94	On schedule

<u>Overdue Deliverables</u>	<u>IAG Approved Planned Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 2 Final Proposed Plan	09 Aug 94	25 Nov 96 ³	Overdue
OU 2 Draft Proposed Plan	10 May 94	30 Aug 96 ³	Overdue
OU 2 Final CMS/FS Report	10 May 94	30 Aug 96 ³	Overdue
OU 2 Draft CMS/FS Report	04 Nov 93	11 Apr 96 ³	Overdue
OU 4 Final Phase I Proposed IM/IRA Decision Document	06 Aug 94	To be determined	In dispute resolution
OU 8 Draft Phase I RFI/RI Report	14 Feb 94	15 Aug 02	Overdue
OU 8 Final Phase I RFI/RI Report	12 Jul 94	10 Feb 98 ²	Overdue
OU 9 Draft Phase I RFI/RI Report	11 Apr 94	07 Sep 04 ²	Overdue
OU 9 Final Phase I RFI/RI Report	06 Sep 94	18 Feb 05 ²	Overdue
OU 10 Draft Phase I RFI/RI Report	25 Aug 94	02 Nov 15	Overdue
OU 12 Draft Phase I RFI/RI Report	20 Apr 94	11 Mar 99 ²	Overdue
OU 13 Draft Phase I RFI/RI Report	08 Aug 94	24 Mar 99 ²	Overdue

¹ Revision pending per the process improvement proposals.

² The Tolling Agreement resolves the issue of any milestones that are missed in OU 2 and the Industrial Area (IA) OUs (8, 9, 10, 12, 13, and 14) between July 1994 and January 31, 1995.

³ Overdue - New schedules based on Human Health Risk Assessment have not been approved by DOE

PROBLEMS AND PROGRAMMATIC ISSUES

OU 4 is experiencing technical problems with the unloading of the sludge and salt from the vacuum trucks because of salt buildup in the bottom of the trucks. This problem has seriously hampered the Pond 207C sludge transfer activities. Several runs were made to test different ways to unload the truck in an attempt to rid the truck of all sludge and salt.

The start of the OU 7 Phase II Field Investigation was delayed because of additional review time required by the regulatory agencies and changes in the scope of work.

Field work for the OU 8 Stage II activities continues to be delayed until issues related to the OU 8 Work Plan can be resolved and the Work Plan is approved by the regulatory agencies. Discussions with the regulatory agencies to resolve the outstanding issues continue.

The delay in the approval of the OU 9 TM #1, *Field Sampling Plan - Original Process Waste Lines - Volume 1, Part A, Outside Tanks*, has produced field activity delays.

Active tanks in OU 9 continued to be a major issue between the CDPHE and the Department of Energy (DOE). This issue is progressing toward dispute resolution because the CDPHE did not approve of the approach proposed by DOE and has indicated that the TM is not approved. DOE continues to work to resolve this problem without going to dispute resolution, and if the issue of active tanks does advance to dispute resolution, additional schedule delays are possible.

Current information indicates that the Rocky Flats Compliance Agreement may not be negotiated before the expiration of the Tolling Agreement on January 31, 1995. Conceivably, DOE may begin accruing stipulated fines and penalties associated with the remaining Table 6 IAG milestones.

NEAR-TERM IAG TABLE SIX MILESTONES

<u>OU #</u>	<u>IAG Milestone Description</u>	<u>Date Scheduled to EPA/CDPHE</u>	<u>Status</u>
2 ¹	Submit Draft Phase II RFI/RI Report	12 Mar 93	Tolling Agreement ³
2 ¹	Submit Final Phase II RFI/RI Report	09 Aug 93	Tolling Agreement ³
2 ¹	Submit Draft CMS/FS Report	04 Nov 93	Extension request submitted. Past due
8	Submit Draft Phase I RFI/RI Report	14 Feb 94	Tolling Agreement ³
9	Submit Draft Phase I RFI/RI Report	11 Apr 94	Tolling Agreement ³
12	Submit Draft Phase I RFI/RI Report	20 Apr 94	Tolling Agreement ³
2 ¹	Submit Final CMS/FS Report	10 May 94	Extension request submitted. Past due
2 ¹	Submit Draft Proposed Plan	10 May 94	Extension request submitted. Past due
8	Submit Final Phase I RFI/RI Report	12 Jul 94	Tolling Agreement ³
SW	Submit Industrial Area Draft Responsiveness Summary	02 Aug 94	10 Dec 94
4	Submit Final Phase I Proposed IM/IRA Decision Document	06 Aug 94	Delayed because of dispute resolution
13	Submit Draft Phase I RFI/RI Report	08 Aug 94	Tolling Agreement ³
2 ¹	Submit Final Proposed Plan	09 Aug 94	Extension request submitted
SW	Submit Industrial Area Final Responsiveness Summary	23 Aug 94	09 Jan 95
SW	Submit Industrial Area Final Decision Document	23 Aug 94	09 Jan 95
10	Submit Draft Phase I RFI/RI Report	25 Aug 94	Tolling Agreement ³
9	Submit Final Phase I RFI/RI Report	06 Sep 94	Tolling Agreement ³
12	Submit Final Phase I RFI/RI Report	15 Sep 94	Tolling Agreement ³
7	Submit Preliminary Draft Proposed Action Memorandum	13 Oct 94	13 Oct 94
1	Submit Corrective Design/Remedial Design Work Plan	01 Nov 94	Extension date to be determined
7	Submit Draft Phase I Proposed IM/IRA Decision Document	01 Nov 94 ²	Extension date to be determined
1	Submit Draft Proposed Plan	22 Nov 94	Extended from 05 Jan 95
1	Submit Final CMS/FS Report	22 Nov 94	Extended from 27 Sep 93
2 ¹	Submit Draft Responsiveness Summary	13 Dec 94	23 Sep 97
4	Submit IM/IRA Responsiveness Summary	14 Dec 94	Delayed because of the dispute resolution
14	Submit Draft Phase I RFI/RI Report	20 Dec 94	Tolling Agreement ³
15	Submit Final Phase I RFI/RI Report	04 Jan 95	On schedule
13	Submit Final Phase I RFI/RI Report	11 Jan 95	02 Dec 99
4	All Solar Ponds Emptied of Water and Sludge	20 Jan 95	Delays in implementation
10	Submit Final Phase I RFI/RI Report	30 Jan 95	Tolling Agreement ³
4	Submit IM Title II Design	10 Feb 95	Delayed because of dispute resolution
4	Submit Final Phase I IM/IRA Decision Document and Final Responsiveness Summary	25 Feb 95	Delayed because of the dispute resolution
1	Submit Final Proposed Plan	24 Feb 95	Extended from 04 Jan 94
9	Submit Draft Phase II RFI/RI Work Plan	10 Mar 95	08 Dec 05
2	Submit Final Responsiveness Summary	16 Mar 95	05 Jan 98
2	Submit Draft Corrective Action Decision/ Record of Decision	16 Mar 95	05 Jan 98
7	Submit Final Phase I Proposed Landfill Closure IM/IRA Decision Document	06 Apr 95 ²	03 Jul 95
9	Submit Draft Phase I Proposed IM/IRA Decision Document	01 May 95	Proposed elimination

<u>OU #</u>	<u>IAG</u> <u>Milestone Description</u>	<u>Date Scheduled</u> <u>to EPA/CDPHE</u>	<u>Status</u>
14	Submit Final Phase I RFI/RI Report	23 May 95	22 Sep 98
10	Submit Draft Phase I Proposed IM/IRA Decision Document	26 May 95	Proposed elimination
21	Submit Final Corrective Action Decision/ Record of Decision	15 Jun 95	15 Sep 97
21	Submit Corrective Design/Remedial Design Work Plan	15 Jun 95	01 Jul 98
6	Submit Draft Phase I RFI/RI Report	21 Jun 95	Extended from 04 Aug 93
1	Submit Draft Responsiveness Summary	23 Jun 95	Extended from 06 May 94
10	Submit Draft Phase II RFI/RI Work Plan	27 Jun 95	27 Jul 95
1	Submit Draft Title II Design	05 Jul 95	Extension date to be determined
11	Submit Draft Phase I RFI/RI Report	20 Jul 95 ⁴	20 Jul 95
5 ¹	Submit Draft RFI/RI Report	21 Jul 95	Extended from 30 Nov 93
7	Submit Landfill Closure IM/IRA Responsiveness Summary	14 Aug 95 ²	04 Oct 95
9	Submit Final Phase II RFI/RI Work Plan	07 Aug 95	04 Jan 06
11	Submit Draft Phase II RFI/RI Work Plan	21 Aug 95	21 Aug 95
11	Submit Final RFI/RI Report	19 Sep 95 ⁴	19 Sep 95

¹ OUs 2 and 3 will request additional extensions because of the Human Health Risk Assessment stop work order.

² Revision is pending per the process improvement proposals.

³ The Tolling Agreement resolves the issue of any milestones that are missed in OU 2 and the Industrial Area (IA) OUs (8, 9, 10, 12, 13, and 14) between July 1994 and January 31, 1995.

⁴ Revised per the Process Improvement Proposal.

SECTION 1. INTRODUCTION

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for September 1994. This program implements the Interagency Agreement (IAG) among the U. S. Department of Energy (DOE), the U. S. Environmental Protection Agency (EPA), and the State of Colorado to investigate, assess, and remediate, where necessary, contaminated areas at or adjacent to DOE's Rocky Flats Environmental Technology Site near Golden, Colorado. This agreement was signed on January 22, 1991. The work is being performed for DOE by EG&G Rocky Flats, Inc.

The Executive Summary of the report contains highlights of significant achievements, milestone information, and any major unresolved issues of the program. Technical progress, schedule status, and milestone status for each Operable Unit (OU) as well as other program activities are presented in Section 2. Section 3 contains the schedules for routine environmental sampling as required by Paragraph 210 of the IAG... Section 4 contains a list that identifies the subcontractors performing work on the program as required by Paragraph 13 of the IAG.

SECTION 2. PROJECT STATUS

2.1 OU 1 - 881 HILLSIDE AREA

The alluvial groundwater at the 881 Hillside Area, located north of Woman Creek in the southeast section of the Rocky Flats Environmental Technology Site, was contaminated in the 1960s and 1970s with solvents and radionuclides. The area is approximately two miles from the eastern, outer edge of the site's buffer zone at Indiana Street. The various Individual Hazardous Substance Sites (IHSSs) that make up OU 1 were investigated and treated as high-priority sites because of potentially elevated concentrations of organic compounds in the near-surface groundwater and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected Interim Remedial Action (IRA) at OU 1 involved construction of an underground drainage system called a French drain that intercepts and contains near-surface groundwater flowing from the OU 1 area. The near-surface water is treated at the 891 treatment facility, designed for this purpose, and released onsite into the South Interceptor Ditch along Woman Creek. Water collected from this ditch undergoes a secondary analysis prior to release. IRA construction was completed in April 1992. A RCRA Facilities Investigation (RFI)/Remedial Investigation (RI) Report was completed in November 1993. To determine the final remedial action, the Feasibility Study (FS) is continuing in parallel with the operation of the IRA.

2.1.1 OU 1 ASSESSMENT

**Scope of Work
Changes This Period** None

**Technical Approach
Changes This Period** None

IAG Milestone Accomplishments	Submit Draft Phase III RFI/RI Work Plan	06 Feb 90
	Submit Final Phase III RFI/RI Work Plan	31 Oct 90
	Submit Draft Phase III RFI/RI Report	28 Oct 92
	Submit Final Phase III RFI/RI Report	05 Nov 93
	Submit Revised Phase III RFI/RI Report	15 Jun 94
	Submit Draft Corrective Measures Study	25 Aug 94
	(CMS)/FS	

Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Final CMS/FS Report	27 Sep 93	22 Nov 94	04 Jan 96
Submit Draft Proposed Plan	27 Sep 93	22 Nov 94	05 Apr 96
Submit Final Proposed Plan	04 Jan 94	24 Feb 95	02 Jul 96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Corrective Design/Remedial Design Work Plan	01 Nov 94		12 Sep 97
Submit Draft Responsiveness Summary	06 May 94	23 Jun 95	03 Dec 96
Submit Final Responsiveness Summary	03 Aug 94	22 Sep 95	17 Mar 97
Submit Draft Corrective Action Decision/Record of Decision	03 Aug 94	22 Sep 95	17 Mar 97
Submit Final Corrective Action Decision/Record of Decision	01 Nov 94	22 Dec 95	28 May 97
Submit Draft Title II Design	05 Jul 95		20 Apr 97

**September Work Activity
Status**

The CMS/FS was delivered to the regulatory agencies on August 25, 1994, the Interagency Agreement (IAG) milestone date. DOE expects to receive the comments from the regulatory agencies on October 7, 1994.

The Draft CMS/FS preliminary comments on groundwater modeling have been received from the Colorado Department of Public Health and Environment (CDPHE).

Technical Memoranda (TM)**Project****OU 1 - 881 Hillside**

TM #10
TM Title
TM Status

Preliminary Remediation Goals
Submitted Final TM to DOE: 03 May 94
When preparation was concluded: 03 May 94
Projected date of submittal to EPA/CDPHE: Submitted
Actual date of submittal: 03 May 94
Date when comments were received: EPA 01 June 94,
CDPHE 26 Jul 94

TM #11
TM Title
TM Status

Alternative Array
Submitted Draft TM to DOE: 03 May 94
When preparation was concluded: 03 May 94
Projected date of submittal to EPA/CDPHE: Submitted
Actual date of submittal: 03 May 94
Date when comments were received: EPA 24 May 94,
CDPHE 06 Jun 94

Planned Work for October • **CMS/FS** - The preliminary comments on groundwater modeling have been received from CDPHE. Comments were addressed in a meeting held on September 27, 1994, with EPA and CDPHE. Comments from the regulatory agencies are due to DOE by October 7, 1994. These comments will be analyzed, addressed, or resolved, and work on the Final CMS/FS will commence.

Problems Additional comments to the Revised Final RI were received from the CDPHE on September 21, 1995. These unscheduled comments are being reviewed to assess their effect on the OU 1 assessment program and the Draft CMS/FS which was submitted on August 25, 1995.

Open Items The regulatory agencies' review of the Draft CMS/FS. Comments are due to DOE on October 7, 1994.

2.1.2 OU 1 REMEDIATION

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments	Submit Draft Proposed Interim Measure (IM)/IRA Decision Document	18 Sep 89
	Submit Proposed IM/IRA Decision Document	06 Oct 89
	Submit Final IM/IRA Decision Document	05 Jan 90
	Begin Phase I-A IM/IRA Construction	15 Jan 90
	Restart Phase I-A IM/IRA Construction (after shutdown)	20 Jun 90
	Begin Phase I-B IM/IRA Construction (ahead of schedule)	28 Sep 90
	Submit IM/IRA Implementation Document	22 Feb 91
	Begin Phase II-A IM/IRA Construction	01 Apr 91
	Begin IM/IRA Testing	05 Aug 91
	Begin Phase II-B IM/IRA Construction	03 Sep 91
	Complete IM/IRA Construction (891 Treatment Building)	02 Mar 92
	Complete IM/IRA Construction (French drain)	13 Apr 92

**Future IAG Milestones
Through FY 95**

None

**September Work Activity
Status**

Accelerated Cleanup - According to the proposed amendment to the IAG, the OU 1 Hot Spot Removal Proposed Action Memorandum and Sampling and Analysis Plan were delivered to the regulatory agencies on September 2, 1994. The IAG amendment provides for a seven-day review cycle. The OU 1 Team was prepared to mobilize for the Hot Spot Removal on September 9, 1994. CDPHE contacted DOE on September 9, 1994, and requested an additional seven days to respond to the Proposed Action Memorandum. DOE instructed the OU 1 Team to postpone the cleanup.

On September 16, 1994, the Proposed Action Memorandum for the Hot Spot Removal was approved by the EPA. CDPHE withheld approval of the OU 1 Hot Spot Removal Proposed Action Memorandum until changes were made to recognize the Division's authority to require compliance with the Colorado Hazardous Waste Regulations. A draft of this revised language was sent to CDPHE on September 20, 1994. CDPHE approval for the OU 1 Proposed Action Memorandum for Hot Spot Removal was received on September 22, 1994. The OU 1 hot spot field work commenced September 26, 1994, and the hot spot removal was completed on September 30, 1994.

IM/IRA Treatment Facility - The vertical culvert leading to the Building 881 footing drain vault apparently has begun to back up resulting in water breaching a Resource Conservation and Recovery Act (RCRA) unit in Building 887. The 800 Area personnel have begun to pump directly from the culvert into the Building 881 footing drain vault to reduce the water to acceptable levels. This resulted in additional flow into the French drain that was not anticipated. It appears that no significant problems will develop from this activity.

DOE has received a recommendation from EG&G that suggests the discontinuation of some sampling requirements. A possible reduction will be the discontinuation of semi-volatile and polychlorinated biphenyl/pesticide sampling at locations on the 881 Hillside.

Project Status

The contract for the Building 891 infrastructure replacement was awarded, and infrastructure replacement work commenced in September 1994.

Processing of Incidental and purge waters at the OU 1 Water Treatment Facility began in September 1994. Approximately 500 gallons of water from the groundwater sampling program currently requires treatment.

Treated groundwater this month: 45,053 gallons
Total treated to date: 2,631,616 gallons

Planned Work for October

- **Accelerated Cleanup** - The hot spot cleanup commenced September 26, 1994, and completion of final sampling is expected by October 3, 1994.
- Laboratory analysis of the hot spot field samples will undergo evaluation throughout the remainder of the month, and completion is expected by November 1994.
- **IM/IRA Treatment Facility** - Normal operations will continue.
- The Building 891 infrastructure replacement work has commenced and will continue through September 1994.
- The purge water treatment will continue as normal operations.

Problems

None

Open Items

None

2.2 OU 2 - 903 PAD, MOUND, AND EAST TRENCHES

The contamination at the 903 Pad and Mound areas is largely attributed to the storage of waste drums in the 1950s and 1960s that corroded over time and allowed hazardous and radioactive material to leak into the surrounding soil. Additional contamination may have resulted from wind dispersion during drum removal and soil movement activities. The East Trenches Area was used for disposal of plutonium- and uranium-contaminated waste and sanitary sewage sludge from 1954 to 1968. Two areas adjacent to the trenches were used for spray irrigation of sewage treatment plant effluent; these areas may have contaminants that were not removed by the treatment system.

Originally, the Surface Water IM/IRA collected seep and surface water contamination sources, then treated and discharged the effluent to the surface water drainage. Operation of the field-scale treatability unit for the South Walnut Creek drainage began in May 1991. The effectiveness of the treatment process was evaluated at three locations: the influent to the treatment facility, several points within the facility, and the discharge point. Approval was granted to discontinue collection of two of the three sources because of a small amount of contamination.

A second IM/IRA was established in late 1991. This Subsurface IM/IRA Plan/Environmental Assessment encompasses all of OU 2 and describes the process to evaluate a remediation technology for removal of residual free-phase volatile organic compound contamination at OU 2. The volatile organic compound removal actions involve *in situ* vacuum-enhanced vapor extraction technology. The interim remedial action will provide information to aid in the selection and design of final remedial actions that address subsurface, residual free-phase volatile organic compound contamination at OU 2.

2.2.1 OU 2 ASSESSMENT

Scope of Work Changes This Period	None
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Technical Approach Changes This Period	None
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IAG Milestone Accomplishments	Submit Draft Phase II RFI/RI Work Plan (Alluvial)	21 Dec 89
	Submit Final Phase II RFI/RI Work Plan (Alluvial)	12 Apr 90
	Submit Draft Phase II RFI/RI Work Plan (Bedrock)	05 Feb 91
	Submit Final Phase II RFI/RI Work Plan (Bedrock)	02 Jul 91
	Submit Field Report for Detailed Soil Vapor Survey	15 Dec 93

Submit Preliminary Draft Phase II RFI/RI Report 16 Dec 93

Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase II RFI/RI Report ¹	30 May 95		18 Nov 94*
Submit Final Phase II RFI/RI Report ¹	21 Sep 95		31 Mar 95*
Submit Draft CMS/FS Report	04 Nov 93		11 Jan 96*
Submit Final CMS/FS Report	10 May 94		31 May 96*
Submit Draft Proposed Plan	10 May 94		23 Jul 96*
Submit Final Proposed Plan	09 Aug 94		17 Oct 97*
Submit Draft Corrective Action Decision/Record of Decision	16 Mar 95		02 Jul 97*
Submit Draft Responsiveness Summary	13 Dec 94		26 Mar 97*
Submit Final Responsiveness Summary	16 Mar 95		02 Jul 97*
Submit Final Corrective Action Decision/Record of Decision	15 Jun 95		15 Sep 97*
Submit Corrective Design/Remedial Design Work Plan	15 Jun 95		07 Jan 98*

* Completion date to be rescheduled because of the Human Health Risk Assessment stop work order.

¹ Tolling Agreement

September Work Activity Status

Remedial Assessment - On September 20, 1994, a meeting was held among the regulatory agencies, DOE, and EG&G to discuss the CDPHE Screen Letter Report and the methodology used to determine the source areas and areas of concern within OU 2. Analytical results from the field sampling during the OU 2 Phase II RI were detailed.

Feasibility Study - Groundwater modeling requirements for the evaluation of the OU 2 remedial alternatives have been discussed. Additionally, the use of site-specific factors from recent literature, rather than the more conservative EPA guidance default values, have been authorized by DOE to assess the human health risks at OU 2.

Operable Unit 2 Closures - Other

Treatability Studies

Removal of Actinides from the Soil Treatability Study - Additional soil was needed to supplement the soil supply for experiments scheduled in Fiscal Year (FY) 95. A soil collection effort supporting multiple treatability studies

has been completed. The collected soil is being stockpiled in Building 779.

High Gradient Magnetic Separation - Three of four tests of the last test series (No. 3) were completed on September 16, 1994. The last test of the series was performed on September 19, 1994. This completes the required laboratory work. Following the receipt of the analytical results and prior to the November 12, 1994, deadline, a report will be issued which covers all aspects of the treatability study.

Annual Treatability Study - The Annual Treatability Study Report is due to the regulatory agencies on March 15, 1995. This project is an IAG deliverable. An Applicable or Relevant and Appropriate Requirements review is in progress. At present, this project is ahead of schedule.

Technical Memoranda

Project

OU 2 - 903 Pad, Mound, and East Trenches

TM #5

TM Title

TM Status

Exposure Scenarios

When preparation was concluded: 15 Jan 93

Projected date of submittal to EPA/CDPHE: 15 Jan 93

Actual date of submittal: 15 Jan 93

Date comments were received: 11 Feb 93 EPA,
12 Mar 93 CDPHE

TM #6

TM Title

TM Status

Modeling

When preparation was concluded: 15 Jan 93

Projected date of submittal to EPA/CDPHE: 15 Jan 93

Actual date of submittal: 15 Jan 93

Date comments were received: 01 Apr 93 EPA,
31 Mar 93 CDPHE

TM #7

TM Title

TM Status

Surficial Soils

When preparation was concluded: 07 Jan 93

Projected date of submittal to EPA/CDPHE: 07 Jan 93

Actual date of submittal: 12 Jan 93

Date comments were received: 21 Jan 93

TM Approved

TM #8	
TM Title	Bedrock
TM Status	When preparation was concluded: 15 Mar 93 Projected date of submittal to EPA/CDPHE: 01 Mar 93 Actual date of submittal: 15 Mar 93 Date comments were received: 14 Apr 93 EPA, 14 Apr 93 CDPHE TM Approved
TM #8 Addendum	
TM Title	Contingency Plan for revised Phase II RFI/RI Work Plan (Bedrock)
TM Status	When preparation was concluded: Jun 93 Projected date of submittal to EPA/CDPHE: Jun 93 Actual date of submittal: Jun 93 Date comments were received: FY 93
TM #9	
TM Title	Chemicals of Concern (second submittal)
TM Status	When preparation was concluded: 24 Aug 93 Projected date of submittal to EPA/CDPHE: 30 Aug 94 Actual date of submittal: 30 Aug 94 Date comments were received: To be determined
TM #10	
TM Title	Toxicity Assessment
TM Status	When preparation was concluded: 24 Aug 93 Projected date of submittal to EPA/CDPHE: 30 Aug 94 Actual date of submittal: To be determined Date comments were received: To be determined

Planned Work for October	<ul style="list-style-type: none">• Work will continue on the Risk Assessment, the Treatability Studies, the Feasibility Study, and the IM/IRA will continue operation.
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Problems	None
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Open Items	None
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2.2.2 OU 2 REMEDIATION

Scope of Work Changes This Period	None
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Technical Approach Changes This Period	None
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Project Status

IAG Milestone Accomplishments	Submit Draft Proposed IM/IRA Decision Document	19 Jun 90
	Submit Proposed Plan IM/IRA Decision Document	18 Sep 90
	Submit Draft Responsiveness Summary	13 Dec 90
	Submit Final Responsiveness Summary and Final IM/IRA Decision Document	11 Jan 91
	Field Treatability Test System Installation Complete	10 May 91
	Begin Field Treatability Testing (Carbon System)	03 May 91
	Submit Draft Treatability Test Report (Phase I Granular Activated Carbon)	01 Apr 92
	Complete IM/IRA Construction (radionuclides removal system)	24 Apr 92
	Begin Field Treatability Testing (radionuclides removal system)	27 Apr 92
	Submit Final Treatability Test Report (Phase I Granular Activated Carbon)	02 Jun 92
	Submit Subsurface Site I Draft Test Plan	29 Oct 92
	Submit Subsurface Site I Final Test Plan	12 Jan 93
	Submit Draft Surface Water Field Treatability Report	13 Jul 93
	Submit Subsurface Site 2 Draft Test Plan	06 July 94
	Submit Final Phase II Treatability Study Report	26 Jan 94
	Begin Subsurface IM/IRA Test I	14 Feb 94

Future IAG Milestones Through FY 95

Milestone Name	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Final Pilot Test Plan Site II	13 Jan 95		13 Jan 95
Submit Final Pilot Test Report Site I	27 Oct 94		08 Nov 94
Submit Draft Final Pilot Test Report	28 Oct 94		28 Oct 94
Submit Final Pilot Test Report	20 Dec 94		20 Dec 94
Submit Final Pilot Test Report Site II	01 Sep 95		01 Sep 95
Submit Final Pilot Test Report Site III	23 Apr 96		23 Apr 96

September Work Activity Status

Subsurface IM/IRA Operations Report - Test Site No. 1 -
In accordance with the Operating Procedure Manual No. 5-2100-OPS-GT Volume III: Geotechnical, GT.11, Plugging and Abandonment of Wells, the well abandonment of four wells was completed. Post Pilot Operations (Extended Operations) have resumed.

Surface Water IM/IRA - In order to support the Excess Chemical program, the OU 2 Field Treatability Unit accepted approximately 110 gallons of sulfuric acid from Building 444.

Spent Granular Activated Carbon will be shipped offsite for reactivation. The spent Granular Activated Carbon will be reused and not stored as a RCRA-regulated waste. Presently, offsite reactivation and/or disposal is being pursued. Efforts are under way to ship the 8,000 pounds of low-level mixed-waste Granular Activated Carbon from Phase I activities to a permitted low-level mixed-waste disposal facility. Reactivation or disposal efforts for the 16,000 pounds of RCRA regulated Granular Activated Carbon from Phase II activities are being discussed. EG&G will attempt to reactivate or dispose of the Phase II Granular Activated Carbon by December 31, 1994.

Samples were taken on September 13, 1994, from the seep adjacent to SW-59. Volatile Organic Compounds and a radiological screen were taken and submitted for analysis. If enough water is present, sampling for metals and radionuclides will begin.

Treated surface water this month:	7,900 gallons
Total treated to date:	24,791,806 gallons

Planned Work for October • Normal operations will continue.

Problems None

Open Items None

2.3 OU 3 - OFFSITE AREAS

OU 3 can be divided into two categories based on two main activities. The IAG-directed activities, according to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), involve assessment of contamination in offsite areas also referred to as Contamination of the Land Surface (IHSS 199), Great Western Reservoir (IHSS 200), Standley Lake (IHSS 201), and Mower Reservoir (IHSS 202). The second category responds to a 1985 out-of-court lawsuit settlement, McKay vs. U. S., which directed that the surface soil contamination be remediated. Remedial activities in compliance with the Settlement Agreement (deep disc plowing) began in 1985. The disturbance resulting from remediation is being revegetated with mediocre success. The overall schedule for this activity is determined by the year-to-year success of the revegetation effort and requirements of the landowners.

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments	Submit Draft Past Remedy Report	26 Oct 90
	Submit Draft Historical Information/ Preliminary Health Risk Assessment Report	09 Nov 90
	Submit Final Past Remedy Report	02 Apr 91
	Submit Final Historical Information/ Preliminary Health Risk Assessment Report	16 Apr 91
	Submit Draft Phase I RFI/RI Work Plan	10 Jul 91
	Submit Final Phase I RFI/RI Work Plan	06 Dec 91

Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	16 Jul 93	30 Oct 95	06 Dec 94
Submit Final Phase I RFI/RI Report	13 Dec 93	11 Jul 96	25 Aug 95

September Work Activity Status The Draft Contaminants of Concern Determination, TM #4, and the Draft CDPHE Conservative Screen letter Report were submitted to DOE for review and comment on August 26, 1994. DOE review comments for the Draft Contaminants of Concern Determination and the Draft CDPHE Conservative Screen Letter Report were

received on September 8, 1994. These documents were revised and submitted to the regulatory agencies on September 26, 1994.

The DOE received the Draft Toxicity Assessment TM #5 for review and comment on September 6, 1994. The regulatory agencies will receive this document in October 1994.

Trenching operations and installation of the electrical line and concrete pads for two of four air and meteorological monitoring stations were completed in September 1994. Documentation photographs of the two constructed air and meteorological monitoring stations were taken on September 5, 1994. Construction operations will begin at the remaining two monitoring station sites once the Jefferson County Site Approval Applications for both sites are processed by the County. The application process is expected to be completed by October 5, 1994.

OU 3 soil samples were shipped to the Los Alamos National Laboratory for plutonium isotope analysis. This analysis will qualify as Rocky Flats Environmental Technology Site generated plutonium versus natural fallout.

A site walk was conducted on the Jefferson County Remedy Lands. The purpose of the site visit was to evaluate the success of the spring 1994 herbicide application event and to consider future weed control activities on the acreage. The site walk indicated that the targeted weed species (i.e., musk and canada thistle) that were present at the time of the application event were from 80 percent to 90 percent affected. However, some immature thistle plants were observed growing within the treated areas. The acreage will be revisited in June 1995 to survey the weed population for an additional herbicide treatment. No fall 1994 weed control activities are planned.

An additional site walk at the air and meteorological station sites was held on September 21, 1994, to conduct a native vegetative species survey, a migratory bird survey, and an endangered plant and animal species survey. The surveys began in September 1994.

Technical Memoranda

Project

OU 3 - Offsite Areas

TM #1

TM Title

TM Status

Field Changes to RFI/RI Work Plan

When preparation was concluded: 10 May 93

Projected date of submittal to EPA/CDPHE: 10 May 93

Actual date of submittal: 23 Apr 93

Date comments were received: 05 Jan 94

TM #2

TM Title

TM Status

Exposure Scenarios for the Human Health Risk Assessment

When preparation was concluded: 12 May 93

Projected date of submittal to EPA/CDPHE: 12 May 93

Actual date of submittal: 03 May 93

Date comments were received: 15 Jul 93

TM #3

TM Title

TM Status

Modeling

When preparation was concluded: Jan 95

Projected date of submittal to EPA/CDPHE: 02 Mar 95

Actual date of submittal: To be determined

Date comments were received: To be determined

TM #4

TM Title

TM Status

Contaminants of Concern

When preparation was concluded: Aug 94

Projected date of submittal to EPA/CDPHE: 20 Sep 94

Actual date of submittal: To be determined

Date comments were received: To be determined

TM #5

TM Title

TM Status

Toxicity

When preparation was concluded: Sep 94

Projected date of submittal to EPA/CDPHE: 11 Oct 94

Actual date of submittal: To be determined

Date when comments were received: To be determined

TM #3

TM Title

TM Status

Modeling

When preparation was concluded: Jan 95

Projected date of submittal to EPA/CDPHE: 02 Mar 95

Actual date of submittal: To be determined

Date comments were received: To be determined

DOE-RFFO

TM #4**TM Title****TM Status****Contaminants of Concern**

When preparation was concluded: Aug 94

Projected date of submittal to EPA/CDPHE: 20 Sep 94

Actual date of submittal: To be determined

Date comments were received: To be determined

TM #5**TM Title****TM Status****Toxicity**

When preparation was concluded: Sep 94

Projected date of submittal to EPA/CDPHE: 11 Oct 94

Actual date of submittal: To be determined

Date when comments were received: To be determined

Planned Work for October

- Construction on the remaining two air and meteorological monitoring stations will continue.
- The review, comments, and approval of TM #4 and the CDPHE Letter Report will begin.
- Efforts will begin on TM #2, *Exposure Scenarios for Human Health Risk Assessment*.
- The review by the regulatory agencies of TM #5, *Toxicity*, will begin.

Problems

None

Open Items

None

2.4 OU 4 - SOLAR EVAPORATION PONDS

OU 4 is comprised of five solar evaporation ponds: 207A, 207B series (North, Center, South), and 207C, which were constructed for treatment and storage of process water from industrial operations. The process water contained treated acidic wastes, industrial liquid wastes (e.g., metal plating solutions), and low-level radioactive wastes.

As technology improved through the early 1960s and 1970s, the ponds were relined with various upgraded materials. However, leakage from the ponds into the soil and groundwater was suspected. Interceptor trenches were installed in 1971 to collect and recycle contaminated groundwater to the ponds and to minimize natural seepage and pond leakage from entering North Walnut Creek. In 1981, these trenches were upgraded by the current, larger Interceptor Trench System, which returned approximately 4 million gallons of groundwater back into the solar evaporation ponds each year.

Process water has not been pumped into the ponds since 1986, and with the diversion of the Interceptor Trench System water to storage tanks in April 1993, groundwater is no longer returned to the ponds. This placement of water into the ponds had been occurring without meeting Land Disposal Restrictions and Minimum Technology Requirements of RCRA. A new, dedicated Building 910 evaporation-treatment facility became operational in July 1993. This building supplements the site's waste treatment facility in Building 374 to process the water stored in the modular tanks. Because upgrades were installed in Building 374, and since other site waste streams decreased in volume, Interceptor Trench System water is now preferentially treated in Building 374 rather than Building 910.

The Solar Evaporation Ponds Subproject is comprised of four technical areas: (1) remix of noncertified pondcrete and saltcrete and pond sludge processing as required by the Federal Facilities Compliance Act; (2) water management/treatment by means of the IM/IRA Decision Document signed by EPA, CDPHE, and DOE; (3) the OU 4 assessment and remedial action, per the IAG, which identified the ponds as one of the 16 OUs to be remediated at the Rocky Flats Environmental Technology Site and superseded the 1988 Ponds-Closure Plan submitted by DOE to the regulators; and (4) pad operations, storage, and disposal activities that are necessary to meet the site's RCRA interim status and permit requirements for storage of pond wastes. The water and pond sludge management is a necessary precursor to OU 4 assessment and remediation, and pad operations are necessary support activities, at least until the noncertified pondcrete is processed and disposed.

Work in these four areas was planned to close the ponds and remediate OU 4. The work was scoped to (1) remove water from the ponds, (2) provide a treatment facility to replace the ponds as evaporation-treatment and storage units for pond-related contaminated groundwater, (3) remove and dispose of pond wastes in compliance with all applicable regulations such as RCRA, (4) assess the nature and extent of contamination at the ponds, (5) complete a RCRA closure of the impoundments, (6) remediate the ponds (source and soils) as needed, and (7) remediate the groundwater as needed.

2.4.1 OU 4 ASSESSMENT

**Scope of Work
Changes This Period** None

**Technical Approach
Changes This Period** None

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
	Submit Final Phase I RFI/RI Work Plan	26 Nov 90
	Submit Draft Phase II RFI/RI Work Plan	27 May 94
	Submit Final Phase II RFI/RI Work Plan	02 Sep 94

**Future IAG Milestones
Through FY 95** None

**September Work Activity
Status** **Phase II RFI** - Submit the OU 4 Final Phase II RFI/RI Work Plan to the regulatory agencies. Progress continues on developing the OU 4 Phase II RFI/RI logic network and a detailed field schedule.

Technical Memoranda**Project****OU 4 - Solar Evaporation Ponds**

TM #1

TM Title

TM Status

Vadose Zone Investigation

Draft submitted to EPA/CDPHE: 16 Nov 92

Comments received: 30 Nov 92

Conditional approval: 30 Nov 92

Projected submittal of Final TM to EPA/CDPHE:
15 Dec 92

Actual submittal date of Final TM: 15 Dec 92

Submittal of TM #1 Vadose Zone Schedule: 19 May 93

EPA/CDPHE final approval of TM #1: 17 Jun 93

TM #2

TM Title

TM Status

Modification to Field Activities

Draft submitted to EPA/CDPHE: 18 Mar 93

Comments received: 07 May 93

Projected submittal of Final TM to EPA/CDPHE:
07 Jun 93

Actual submittal date of Final TM: 09 Jun 93

EPA/CDPHE final approval of TM #2: 30 Jun 93

TM #3

TM Title

TM Status

Environmental Evaluation

Draft submitted to EPA/CDPHE: 19 Mar 93

Comments received: EPA 21 Apr 93, CDPHE 02 Jun 93

Projected submittal of Final TM to EPA/CDPHE: 3
0 Apr 93

Actual submittal date of Final TM: 02 Jul 93

EPA/CDPHE final approval of TM #3: 30 Jul 93

TM #4

TM Title

TM Status

Human Health Risk Assessment Exposure Scenarios

Draft submitted to EPA/CDPHE: 19 Mar 93

Comments received: EPA 21 Apr 93, CDPHE 23 Apr 93

Projected submittal of Final TM to EPA/CDPHE:
11 Jun 93

Actual submittal date of Final TM: 11 Jun 93

EPA/CDPHE final approval of TM #4: 25 Jun 93

TM #2

TM Title

TM Status

Modification to Field Activities

Draft submitted to EPA/CDPHE: 18 Mar 93

Comments received: 07 May 93

Projected submittal of Final TM to EPA/CDPHE:
07 Jun 93

Actual submittal date of Final TM: 09 Jun 93

EPA/CDPHE final approval of TM #2: 30 Jun 93

TM #3

TM Title

TM Status

Environmental Evaluation

Draft submitted to EPA/CDPHE: 19 Mar 93

Comments received: EPA 21 Apr 93, CDPHE 02 Jun 93

Projected submittal of Final TM to EPA/CDPHE:
30 Apr 93

Actual submittal date of Final TM: 02 Jul 93

EPA/CDPHE final approval of TM #3: 30 Jul 93

TM #4

TM Title

TM Status

Human Health Risk Assessment Exposure Scenarios

Draft submitted to EPA/CDPHE: 19 Mar 93

Comments received: EPA 21 Apr 93, CDPHE 23 Apr 93

Projected submittal of Final TM to EPA/CDPHE:
11 Jun 93

Actual submittal date of Final TM: 11 Jun 93

EPA/CDPHE final approval of TM #4: 25 Jun 93

DOE-RFFO

Planned Work for October • The field activities for the Phase II RFI/RI program will begin.

Problems None

Open Items None

2.4.2 OU 4 REMEDIATION

Scope of Work Changes This Period None

Technical Approach Changes This Period DOE has directed EG&G to pursue only minimal treatment of the sludge and inventoried pondcrete prior to the disposal in the Phase I Remediation.

IAG Milestone Accomplishments The first IAG remediation milestone for this OU is the Draft Phase I Proposed IM/IRA Decision Document that was delivered to the regulatory agencies on May 27, 1994.

Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Final Phase I Proposed IM/IRA Decision Document	12 Sep 94	06 Aug 94*	To be determined*
All Solar Ponds Emptied of Water and Sludge	new	20 Jan 95	12 Oct 94
Submit IM/IRA Responsiveness Summary	25 Jan 95	14 Dec 94*	To be determined*
Submit Final Phase I IM/IRA Decision Document and Final Responsiveness Summary	24 Apr 95	25 Feb 95*	To be determined*
Submit IM Title II Design Work Plan	24 Jun 96	10 Feb 95*	To be determined*
Begin Phase I IM/IRA Construction	28 Jan 95	27 Sep 95	To be determined*

*Delayed because of the initiation of the dispute resolution. Modified dates have yet to be determined.

September Work Activity Status **Treatment, Storage, and Disposal Conceptual Design** - A consolidated treatment Statement of Work for pondcrete and sludge was issued to Procurement to solicit the subcontractor proposal. The FY 95 funding for treatment studies was released to Procurement.

The conceptual design funding was forwarded to Procurement. A consolidated Statement of Work for conceptual design is being written.

The technical schedule and cost impacts of the change to pondcrete under the cap is under assessment.

Waste Treatment - Remix - Other site sources were not interested in funding saltcrete remix treatability studies. A revised Statement of Work has been drafted to terminate the saltcrete portion of the treatment study efforts and to include pondcrete/pondsludge into a revised treatment study for pondcrete under the cap. Once inventoried saltcrete is certified Land Disposal Restriction compliant (approximately 90 percent), the remaining quantities should be able to be handled by other means besides a dedicated treatment facility.

Treatability - Sludge - A new Statement of Work for the treatability of both pondsludge and pondcrete has been written and forwarded to Procurement.

Waste Storage - The 904 Pad repack container contract was awarded on September 14, 1994. The delivery of the first containers is expected in October 1994. A kick-off meeting with the vendor was held on September 22, 1994, to discuss transportation details and technical acceptance inspections.

Interim Remedial Action

Water Management - The Building 910 sump pump project commenced on September 13, 1994. The storm drain extension construction is currently scheduled to begin on October 1, 1994. The modular tanks have a remaining usable volume of about 489,000 gallons. Approximately 19,000 gallons evaporated from the tanks during the past week. The RCRA inspections and compressor rotations were completed satisfactorily in Building 910. Also, RCRA inspections of the modular storage tanks were completed.

Interim Measure Remediation

RFI - A comment response document was prepared to include EPA comments received on the Draft IM/IRA Environmental Assessment Decision Document. The response to the CDPHE comments is complete, and modifications to the document continue.

IMIRA Decision Document - The planning to incorporate the inventoried pondcrete as a remediation waste in the OU 4 pond closure continued. Objectives for the treatability study were established, including the collection of data for the treatment process and the modeling needed to demonstrate protectiveness. Draft schedules were prepared for the major elements of the project; these schedules will be merged into an integrated program schedule so that schedule reserve durations and IAG commitment dates can be proposed. Impacts of several months are expected on all related milestones.

Preconstruction - The Statement of Work has been completed for the OU 4 site stripout, and a request for proposal was submitted on September 15, 1994. A prebid walkdown is scheduled to be held, and the cost proposal is expected on October 5, 1994.

Approval was given on September 20, 1994, and the Title II review comments are currently being incorporated.

Construction of the vehicle access gate has been changed from November 1994 to April 1995. This decision was based on concerns over available assistance by supporting organizations and weather restrictions. This activity contains adequate float to ensure that it does not affect the critical path.

Phase II RFI - Activities continued for the preparation of Phase II field activities. Nonintrusive drilling activities are scheduled to start on October 3, 1994.

Work continues on the rebaseline process to streamline the Phase II program.

Interim Measure Sludge

Preconstruction - Building 788 cleanup is being worked as a fill-in job while cleaning C Pond. Most of the waste in the building has been collected and packaged.

Construction - Construction of a sun shield at the dock for the Waste Solidification operators was completed. Clean out ramps were installed in the tents.

Testing & Operations - Problems associated with off loading the salt and sludge from the trucks have continued because of salt buildup in the bottom of the vacuum trucks. Several runs were made to test different

ways to physically unload the truck in an attempt to get all of the sludge/salt out of the trucks.

The most promising solution to date is the use of a water pressure washer to remove the heel at the end of each run. Two internally reportable spills occurred as a result of plugged hoses and attempts to open the truck tank for cleaning. New tools and procedures for this operation are now being prepared and will be in place before any further attempts are made to clean out the truck tanks.

Planned Work for October

- The sludge removal operations in Pond 207C will restart with enhanced truck unloading methodology.
- The IM/IRA Title II Design effort, which encompasses the effects of including minimally treated sludge and pondcrete under the barrier, will continue.
- The removal process at the silos located near Building 788 will commence.
- The contract will be awarded, and the construction for the site stripout activity will commence.
- Site cleanup in support of the relocation of the cargo containers currently located near Building 964 will commence.

Problems

Difficulty in unloading the sludge and salt from the vacuum trucks is seriously hampering the Pond 207C sludge removal process.

Open Items

Treated pond sludge has not been incorporated into the IM/IRA and the the dispute resolution has not concluded..

There is uncertainty regarding the State of Colorado's Corrective Action Management Unit regulation. The State of Colorado ratified the Corrective Action Management Unit legislation, which is more restrictive than the EPA's legislation. A key OU 4 assumption is the use of the Corrective Action Management Unit and the Temporary Unit for the Phase I Remediation.

2.5 OU 5 - WOMAN CREEK

OU 5, the Woman Creek Priority Drainage, comprises assessment and remediation of 11 IHSSs in the Woman Creek drainage: Original Landfill (IHSS 115); Ash Pits (IHSSs 133.1 - 133.4); Incinerator (IHSS 133.5); Concrete Wash Pad (IHSS 133.6); Detention Ponds C-1 and C-2 (IHSSs 142.10 and 142.11); Surface Disturbance (IHSS 209), southeast of Building 881; and Water Treatment Plant Backwash Pond (IHSS 196). Two additional surface disturbances have been identified: one south of the Ash Pits and a second west of IHSS 209. These last two sites have been included in the OU 5 Work Plan. IHSS 196 has been assigned to this OU. Possible contamination in this OU was caused by landfill operations, stormwater runoff into holding ponds, and Ash Pit operations. Constituents in OU 5 include depleted uranium, metals, solvents, pesticides, polychlorinated biphenyl, and Volatile Organic Compounds. Media affected include soils, sediments, surface water, groundwater, and air.

**Scope of Work
Changes This Period**

None

**Technical Approach
Changes This Period**

A proposal was made to utilize the Presumptive Remedy approach. This approach will be used in evaluating and selecting remedial options for the Original Landfill (IHSSs 115 and 196). The proposed approach will be presented to the regulatory agencies on October 13, 1994.

**IAG Milestone
Accomplishments**

Submit Draft Phase I RFI/RI Work Plan	05 Apr 91
Submit Final Phase I RFI/RI Work Plan	30 Aug 91

**Future IAG Milestones
Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	30 Nov 93	21 Jul 95	11 May 95
Submit Final Phase I RFI/RI Report	03 May 94	17 Jan 96	14 Nov 95

**September Work Activity
Status**

Mobilization to the field as part of the implementation of TM #15, *Addendum to the Field Sampling Plan*, began on September 1, 1994. During September 1994, the following field activities were completed:

- the safety inspection and decontamination of the drill rig;
- the staking of borehole locations;
- the measurement of water levels in wells, well points, and mini-wells at IHSSs 115 and 133;

- the visual surveys of the Woman Creek drainage were conducted to determine if any bedrock outcrops are present;
- a visual survey of the Time Domain Electro-Magnetic grid at IHSS 133 (Ash Pits, Incinerator, and Concrete Wash Pad) to separate anomalies because of surface metallic debris from buried metallic debris in the trenches and ash pits, and
- the drilling operations with the small-footprint drilling rig that started September 27, 1994.

The implementation of the TM #15, *Addendum to the Field Sampling Plan*, may be impacted by the habitat of the Preble's Meadow Jumping Mouse. The Preble's Meadow Jumping Mouse is not on the Federal Threatened and Endangered Species list, but a petition has been submitted to the United States Fish and Wildlife Department. Eight of the proposed well points located along Woman Creek are in the proximity of the mouse habitat, and the wells are necessary to obtain groundwater data and to assess the seasonal flow conditions for the hydrogeologic characterization of the site along Woman Creek and down gradient from the OU 5 IHSSs. These locations have been cleared for Wetlands Impacts. Further DOE direction will determine final clearance.

Identification of the potential contaminants of concern and the nature and extent of contamination evaluation was completed with current data. This evaluation will be updated after the analytical results from the Field Sampling Plan are received.

Groundwater, surface water, air quality data analysis and fugitive dust modeling activities continue.

Technical Memoranda

Project

OU 5 - Woman Creek Priority Drainage Remedial Investigation

TM #1

TM Title

TM Status

Surface Water and Sediments

When preparation was concluded: 30 Nov 92

Projected date of submittal to EPA/CDPHE: 30 Nov 92

Actual date of submittal: 13 Oct 92

TM #2	
TM Title	Surface Geophysics
TM Status	When preparation was concluded: 30 Nov 92 Projected date of submittal to EPA/CDPHE: 30 Nov 92 Actual date of submittal: 13 Oct 92
TM #3	
TM Title	Soil Sampling at IHSS 115
TM Status	When preparation was concluded: 07 May 93 Projected date of submittal to EPA/CDPHE: 07 May 93 Actual date of submittal: 26 Jan 93
TM #4	
TM Title	Soil Sampling at IHSS 133
TM Status	When preparation was concluded: 07 Jun 93 Projected date of submittal to EPA/CDPHE: 07 Jun 93 Actual date of submittal: 12 Apr 93
TM #5	
TM Title	Soil Gas Sampling at IHSS 115
TM Status	When preparation was concluded: 07 May 93 Projected date of submittal to EPA/CDPHE: 07 May 93 Actual date of submittal: 25 Mar 93
TM #6	
TM Title	Cone Penetrometer at IHSS 115
TM Status	When preparation was concluded: 14 Apr 93 Projected date of submittal to EPA/CDPHE: 14 Apr 93 Actual date of submittal: 25 Mar 93
TM #7	
TM Title	Soil Borings at IHSS 133
TM Status	When preparation was concluded: 07 May 93 Projected date of submittal to EPA/CDPHE: 07 May 93 Actual date of submittal: 19 Feb 93
TM #8	
TM Title	Monitoring Wells at IHSS 115
TM Status	TM #8 has been canceled and has been replaced by a letter outlining the justification for the location of the wells in IHSS 115.
TM #9	
TM Title	Monitoring Wells at IHSS 133, Ash Pits, Incinerator, and Concrete Wash Pad
TM Status	Projected date of submittal to EPA/CDPHE: 06 May 93 Actual date of the Draft TM submittal to EPA/CDPHE: 06 May 93 Actual date of the Final TM submittal to EPA/CDPHE: 28 Jun 93

TM #10	
TM Title	Soil Borings at IHSS 209
TM Status	When preparation was concluded: 06 Mar 93 Projected date of submittal to EPA/CDPHE: 06 Mar 93 Actual date of the Final TM submittal to EPA/CDPHE: 06 Mar 93
TM #11	
TM Title	Contaminants of Concern
TM Status	When the Draft Final TM is estimated to be concluded: 15 Nov 94 Submittal of TM #11 was delayed because of the Human Health Risk Assessment stop work order.
TM #12	
TM Title	Exposure Scenarios
TM Status	When the Final TM is estimated to be concluded: 01 Dec 94 Submittal of TM #12 was delayed because of the Human Health Risk Assessment stop work order.
TM #13	
TM Title	Modeling
TM Status	When the Draft Final TM was concluded: 01 Dec 93 Actual date of submittal of the Draft Final TM to EPA/ CDPHE: Dec 93
TM #14	
TM Title	Toxicity Assessment
TM Status	Submittal of TM #14 was delayed because of the Human Health Risk Assessment stop work order. Projected date of the Draft Final TM submittal to EPA/ CDPHE: 20 Dec 94
TM #15	
TM Title	Addendum to the Field Sampling Plan
TM Status	When the Final TM is estimated to be concluded: 31 Aug 94 Actual date of the Final TM submittal to EPA/CDPHE: 31 Aug 94
Planned Work for October	<ul style="list-style-type: none">• Field work activities will continue.
Problems	None
Open Items	The implementation of the TM #15, <i>Addendum to the Field Sampling Plan</i> , may be impacted by the habitat of the Preble's Meadow Jumping Mouse.

2.6 OU 6 - WALNUT CREEK

OU 6, the Walnut Creek Priority Drainage, comprises assessment and remediation of 19 IHSSs: the A-series Detention Ponds, Ponds A-1 through A-4 (IHSSs 142.1 through 142.4 and 142.12); the B-series Detention Ponds, Ponds B-1 through B-5 (IHSS 142.5 through 142.9); the North Spray Field (IHSS 167.1); the East Area Spray Field (IHSS 216.1), the Trenches A, B and C (IHSSs 166.1, 166.2 and 166.3); the Sludge Dispersal Area (IHSS 141); the Triangle Area (IHSS 165); the Old Outfall Area (IHSS 143); and the Soil Dump Area (IHSS 156.2).

Completion of field operations resulted in obtaining the following samples from the IHSSs in OU 6: stream sediment, pond sediment, surface soil, subsurface soil, and surface and groundwater.

The regulatory agencies have proposed a new IM/IRA on the operation of the Rocky Flats Environmental Technology Site Ponds. On April 15, 1994, the regulatory agencies and DOE agreed that the ponds will be managed by the Pond Water Management IM/IRA. The Pond Water IM/IRA has been transferred to the onsite Surface Water Management Major Activity Document.

**Scope of Work
Changes This Period** None

**Technical Approach
Changes This Period** None

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	19 Apr 91
	Submit Final Phase I RFI/RI Work Plan	16 Sep 91

**Future IAG Milestones
Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	04 Aug 93	21 Jun 95	19 Apr 95
Submit Final Phase I RFI/RI Report	07 Jan 94	21 Dec 95	20 Nov 95

**September Work Activity
Status**

The source area maps and area of concern maps were completed and presented to the regulatory agencies on September 2, 1994. At this meeting, grids were placed on the area of concern maps, and maximum exposure areas were agreed upon.

The follow-up Data Aggregation Letter Report, which documents the CDPHE source areas, conservative screen results, and areas of concern, is scheduled to be transmitted to DOE on September 30, 1994. This report will be used to remove source areas from the Risk Assessment process or transfer them to another OU. The following source areas have passed the CDPHE conservative screen: IHSSs 142.5, 142.9, 142.12, 166.1 through 166.3, and 216.1. IHSS 143, the Old Outfall, did not pass the conservative screen. Based on the preliminary conservative screen results, this IHSS will be transferred to OU 8 for future Risk Assessment and potential remediation. IHSS 143 is located in the Protected Area near OU 8.

Comments are pending on TM #4, *Chemicals of Concern*. The Draft TM #5, *Toxicity Assessment*, was delivered to the regulatory agencies on September 7, 1994, and comments are pending. Work continues on the Final TM #2, *Exposure Scenarios*, and the final revisions to TM #3, *Model Description*.

The revised integration of the Environmental Evaluations for Walnut Creek and Woman Creek are nearly complete. Once the methodology is clear, the schedule and cost impacts will be easier to identify and will allow for an initiation of the modification to the Environmental Evaluation subcontract.

Preliminary analytical results were returned by the laboratory assigned to complete the polychlorinated biphenyls tissue analysis. These results have shown slightly elevated levels of polychlorinated biphenyls in the tissues of fat head minnows from B-4 pond. Sampling results from the bass in A-3 and fat head minnows in A-4 and B-5 were considerably less. The preliminary sediment polychlorinated biphenyls data have not revealed any significant polychlorinated biphenyls contamination. However, the B-3 pond has recorded slightly elevated levels of polychlorinated biphenyls. Additional samples were taken in offsite reservoirs in OU 3 and the ponds in OU 5. The preliminary polychlorinated biphenyl tissue data from these areas have not been received from the laboratory. These results are expected by September 23, 1994. The results were delayed because of laboratory equipment failure. The results of this sampling effort will be incorporated in the Addendum No. 1, Additional Pond Sediment Investigations for OU 6. The revised

information will be added as an appendix to the OU 3 and OU 5 Work Plans. Groundwater, air, and surface water modeling activities continue.

964 East Yard Cleanup - The field work portion of the 964 East Yard Cleanup is 100 percent complete. However, efforts continue to identify a method of decontamination that can be used efficiently outside on large items. One method being investigated is a needle gun with a High Efficiency Particulate Air filter attachment that has been used outside at the Rocky Flats Environmental Technology Site with no detectable airborne particulate. An electrochemical etching process is also being investigated; tests indicate this may be a viable option on a limited basis. Building 980 is being researched as a potential site for decontamination and may become available in the near future for this process. Another possibility being evaluated is the performance of a test run in a cargo container at the 964 Yard.

Sprinkler Pipe Cleanup, Multiple IHSS Cleanup, and B-3 Pond Cleanup - The immediate access has not been acquired to a location onsite that is suitable to perform the cleanup activities associated with piping from B-3 Pond. This project is scheduled in December 1994 or January 1995 for use in Building 788 .

Rodent feces were discovered inside some of the piping, and this raised a concern about the possibility of contracting the Hantavirus. Immediate action was taken to place all workers who are in direct contact with the pipe in full face respirators. The site-specific Health and Safety Plan was revised to reflect this requirement. The CDPHE was contacted to determine if the Hantavirus is a legitimate concern; however, there have been no cases documented along the front range area, and the only documented case this year occurred in Idaho.

Technical Memoranda

Project

OU 6 - Walnut Creek

TM #1

TM Title

TM Status

Work Plan Modifications

Approved by EPA: 08 Jan 93

TM #2	Exposure Scenarios
TM Title	When preparation of the Draft TM was concluded:
TM Status	07 July 93
	Date the Draft TM was submitted to EPA/CDPHE:
	07 Jul 93
	Projected date the Final TM will be submitted to EPA/
	CDPHE: 14 Oct 94
TM #3	Modeling Description
TM Title	When preparation of draft was concluded: 10 Nov 93
TM Status	Date the Draft TM was submitted to EPA/CDPHE:
	10 Nov 93
	Date EPA/CDPHE comments were received: 23 Dec 93
	Date the Final TM was submitted to EPA/CDPHE :
	04 Jan 94
	Projected date the Second Final TM will be submitted to
	EPA/CDPHE: To be determined
TM #4	Contaminants of Concern
TM Title	When preparation of Draft was concluded: 23 Aug 94
TM Status	Date the Draft TM was submitted to EPA/CDPHE:
	23 Aug 94
	Date EPA/CDPHE comments were received: To be
	determined
	Projected date the Final TM will be submitted to EPA/
	CDPHE: 14 Oct 94
TM #5	Toxicity Factors
TM Title	When preparation was estimated to be concluded:
TM Status	09 Sep 94
	Date the Draft TM was submitted to EPA/CDPHE:
	23 Aug 94
	Date EPA/CDPHE comments were received: To be
	determined
	Projected date the Final TM will be submitted to EPA/
	CDPHE: 14 Oct 94
Planned Work for October	<ul style="list-style-type: none">• The preparation and submittal process for the Final TM #4, <i>Chemicals of Concern</i>; TM #5, <i>Toxicity Factors</i>; and TM #2, <i>Exposure Assessment</i>, will continue.

Project Status

- The preparation of the Environmental Evaluation Report will continue.
- Chapter 4, Nature and Extent, of the RFI/RI Report will be completed.
- Air, surface water, and groundwater modeling efforts will continue.
- The preparation of the TM #1, *Feasibility Study*, will begin.

Problems

None

Open Items

None

2.7 OU 7 - PRESENT LANDFILL

OU 7, the Present Landfill, is located north of the site complex on the western edge of an unnamed tributary of North Walnut Creek and is comprises four IHSSs. IHSS 114 includes landfill waste and leachate at the Present Landfill and soils beneath the landfill potentially contaminated with leachate. IHSS 203 contains potentially contaminated soils at the Inactive Hazardous Waste Storage Area. A section of the Present Landfill located in the southwest corner was used between 1986 and 1987 as a temporary storage area for hazardous waste. The Present Landfill began operation in August 1968 and was originally constructed to provide for disposal of the Rocky Flats Environmental Technology Site nonradioactive and nonhazardous wastes. In September 1973, tritium was detected in leachate from the landfill. During the mid-1980s, extensive investigations were conducted on the waste streams (types) placed into the landfill; consequently, hazardous wastes/hazardous constituents were identified. Although currently operating as a nonhazardous sanitary landfill, the facility is considered an inactive hazardous waste disposal unit undergoing RCRA closure. In order to maintain the landfill pond at an acceptable volume to prevent discharge, spray evaporation of landfill pond water was applied to the north and south of the landfill pond comprising IHSSs 167.2 and 167.3, respectively. The practice of spray evaporation was discontinued in 1993.

**Scope of Work
Changes This Period**

As a result of the Senior Executive Committee Dispute Resolution, four new milestones concerning the Landfill Leachate Collection IM/IRA were added to the OU 7 work scope. As directed by the regulatory agencies, the Landfill Leachate Collection Project will be completed as an accelerated action using the Proposed Action Memorandum approach.

**Technical Approach
Changes This Period**

As a result of the Senior Executive Committee Dispute Resolution, a separate IM/IRA is required for the landfill leachate. As directed by the regulatory agencies, the Landfill Leachate Collection Project will be completed as an accelerated action. A Proposed Action Memorandum rather than an IM/IRA will be used.

**IAG Milestone
Accomplishments**

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	28 Aug 91
Submit Draft Phase I RFI/RI Report	23 May 94
Submit Draft Phase II RFI/RI Work Plan	23 May 94

Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
<u>Landfill Closure IM/IRA</u>			
Submit Draft Phase I Proposed IM/IRA Decision Document	01 Nov 94*		03 May 95
Submit Final Phase I Proposed IM/IRA Decision Document	06 Apr 95*		03 Jul 95
Submit IM/IRA Responsiveness Summary	14 Aug 95*		04 Oct 95
<u>Landfill Leachate Collection IM/IRA</u>			
Submit Preliminary Draft Proposed Action Memorandum to CDPHE/EPA	13 Oct 94		13 Oct 94
Release Final Draft Proposed Action Memorandum for Public Comment	25 Nov 94*		25 Nov 94
Submit Final Responsiveness Summary and Proposed Action Memorandum to CDPHE/EPA	08 Mar 95*		12 Aug 98
Release Final Responsiveness Summary and IM/IRA	22 Mar 95*		22 Mar 95

* Still under negotiation. The regulatory agencies have asked for longer time periods to review the documents and this request will impact document deliverable dates.

September Work Activity Status

The TM, *Revised Work Plan*, was delivered to the regulatory agencies on September 8, 1994. This document satisfied two Table 6 IAG milestones: the submittal of the Phase I RFI/RI Report and the Phase II RFI/RI Work Plan.

A meeting was held with the Landfill Closure/Leachate Accelerated Action Project teams. Issues discussed included construction concerns of the Leachate Collection System and preliminary review comments. The possibility of a power supply for the Landfill Leachate Collection System was investigated. This power supply will eventually be utilized for the post closure monitoring activities at the landfill. A site walk identified a potential route of power along the north side of the proposed landfill cap area. The survey of the proposed electrical power routing is under way.

The National Environmental Policy Act Categorical Exclusion for the Phase II field work is undergoing the DOE approval and signature cycle.

Phase II sampling will include soil boring tests to determine the stability of the soil at the tank farm location.

Project Status

The Title II Design was completed on September 28, 1994, and is being reviewed by DOE.

On September 21, 1994, the quarterly overview of the OU 7 project was presented to the public.

The Draft Proposed Action Memorandum was completed on September 16, 1994, and is undergoing DOE review. A public meeting will be held on October 19, 1994, to present the Proposed Action Memorandum and respond to public concerns.

Technical Memoranda**Project****OU 7 - Present Landfill**

TM

TM Title

TM Status

Revised Work Plan

Submitted the Draft TM to EPA/CDPHE for review:

23 May 94

Comments received: 01 July 94

Submitted the Final TM transmitted to EPA/CDPHE:

09 Sep 94

Planned Work for October

- The Phase II Field Investigation in support of the landfill closure will be initiated.

Problems

- The start of the Phase II Field Investigation was delayed because of additional review time required by the regulatory agencies and changes in the scope of work.

Open Items

The EPA and CDPHE approval and the rebaseline of the schedule is presented in the Process Improvement Proposal.

2.8 OU 8 - 700 AREA

The 24 IHSSs that constitute OU 8 comprises separate sites inside and around the production area of the Rocky Flats Environmental Technology Site. Contamination sources within the various IHSSs include above-ground and underground tanks, equipment washing areas, and releases inside buildings that potentially affected areas outside the buildings. Contaminants from these sources may have been introduced into the environment through spills on the ground surface, underground leakage and infiltration, and, in some cases, precipitation runoff. The chemical composition of the contaminants varies widely between the IHSSs, and ranges from low-level radioactive mixed wastes to nonradioactive organic and inorganic compounds.

OU 8 is within the Industrial Area (IA) at the Rocky Flats Environmental Technology Site and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	01 May 92
	Submit Final Phase I RFI/RI Work Plan	01 Dec 92

Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	14 Feb 94	Tolling Agreement	04 Nov 97
Submit Final Phase I RFI/RI Report	12 Jul 94	Tolling Agreement	10 Feb 98

September Work Activity Status The report that accompanied the video tape of the Foundation Drain Systems was finalized and included in the revised TM #1. Comments on TM #1 were prepared.

Early removal actions, which consists of the removal of two steam condensate tanks and a sodium hydroxide tank from north of Building 774, continued. DOE has granted approval to have soil samples from around the tanks collected and analyzed. However, because of

factors such as standing water over the sample points which will require sampling methodology changes, this work may be performed by the site's Surface Water and Sediment Sampling Program and may be separated from the OU 8 investigation. This decision has not been finalized.

Preparation for the Operational Readiness Review in anticipation of the start of the nonintrusive field investigation continued. At this time, most readiness-related issues have been satisfactorily resolved except for the issue of formal Work Plan approval.

The newly revised schedule establishes the commencement of OU 8 field work will begin in October 1994. Approval from the regulatory agencies is required before work can begin, and the approval has been delayed. Because of this delay, the Work Plan approval has become a time-critical task.

A contract modification was awarded to allow continuation of Stage 2 Field Investigation work. As soon as the issue of a formal Work Plan approval is resolved, work will begin.

Discussions with the regulatory agencies to resolve the outstanding issues continued. While progress was made, formal approval was not obtained. As a result, the delay continued for field work for OU 8 Stage 2.

Technical Memoranda

Project

OU 8 - 700 Area

TM #1

TM Title

Footing/Under Drains Data Compilation and Field Sampling Plan

TM Status

Projected date of submittal to EPA/CDPHE: 22 Apr 94

Actual date of submittal: 05 May 94

Date when EPA/CDPHE comments received: Pending

Planned Work for October

- Outstanding Work Plan approval related issues will be resolved, and formal approval will be obtained.
- The Readiness Review will be completed.
- The Stage 2 field activities will begin.

Problems

- Formal approval of the Work Plan continues to be delayed.

Open Items

- Formal approval of the Work Plan continues to be delayed.

2.9 OU 9 - ORIGINAL PROCESS WASTE LINES

This project involves the investigation and remediation of a series of tanks and associated process waste lines. The original process waste lines consisted of 35,000 feet of buried pipeline that transferred process wastes from production buildings to onsite treatment plants. A system of 60 designated pipe sections, 40 single and multiple storage tank sites, and three other areas of suspected process waste leakage is included in OU 9. The system was placed into operation in 1952, and additions were made to the system through 1975. The original system was replaced between 1975 and 1984 by the new process waste system. Some tanks and lines from the original system were incorporated into either the new process waste system or the fire water deluge collection system.

The original system is known to have transported or stored various aqueous process wastes containing low-level radioactive materials, nitrates, caustics, and acids. Small quantities of other liquids were also introduced in the system, including medical decontamination fluids, miscellaneous laboratory liquids, and laundry effluent. The RFI/RI Phase I Work Plan includes inspection and sampling of the tanks and pipelines that are accessible and soil sampling to determine the extent of contamination in the vadose zone. The soil sampling will be performed by installing test pits and boring where known or suspected releases occurred near pipe joints and valves, at approximately 100- to 200-foot intervals along the pipelines, and by installing borings around the outdoor tanks. Soil characterization studies will determine the need for soil removal and/or treatment. The results of the Phase I RFI/RI will determine the need for interim and/or final remediation action.

OU 9 is within the IA at the Rocky Flats Environmental Technology Site and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

**Scope of Work
Changes This Period** None

**Technical Approach
Changes This Period** None

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
	Submit Final Phase I RFI/RI Work Plan	26 Nov 91

**Future IAG Milestones
Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	11 Apr 94	Tolling Agreement	04 Jan 01

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Final Phase I RFI/RI Report	06 Sep 94	Tolling Agreement	16 Sep 03
Submit Draft Phase II RFI/RI Work Plan	10 Mar 95		23 Jul 04
Submit Draft Phase I Proposed IM/IRA Decision Document	01 May 95		31 Oct 03
Submit Final Phase II RFI/RI Work Plan	07 Aug 95		01 Apr 05
Submit Final Phase I Proposed IM/IRA Decision Document	27 Sep 95		12 Jul 04

**September Work Activity
Status**

The Draft TM #1, *Volume II, Part A - the Field Sampling Plan for Outside Pipelines*, was completed and is currently under review.

Training of field personnel for the Stage I Outside Tank Investigation is in progress. The current schedule has been extended to October 20, 1994. The training requirements for this investigation is atypical because of the combination of confined space entry, intrusive activities such as drilling, possible asbestos exposure, building requirements, and the hazardous nature of contaminants under investigation.

The draft modification to the Industrial Area (IA) Health and Safety Plan, which adds the requirements for the OU 9 outside tank investigation, was completed and is currently being reviewed. The preliminary draft should address any additional requirements posed by the investigation of Tanks T-11 and T-30. Once the preliminary draft is reviewed, corrections will be made. If the corrections are accepted, the modification will be finalized.

Work continued on the FY 95 Work Package and Major Acquisition Document. This included modifications to reflect the investigation of Tanks T-11 and T-30.

In September 1994, the procurement process was initiated for subcontractor support on the Stage I RFI/RI Outside Tank Investigation.

A review and evaluation is in progress by DOE of a draft plan to streamline the RFI/RI at OU 9. Since the draft plan involves major IAG milestones such as the elimination of the Phase II RFI/RI and the IM/IRA, the regulatory agencies will need to give their approval.

Active tanks in OU 9 continue to be a major issue between CDPHE and DOE. This issue is progressing toward dispute resolution because CDPHE did not approve of the approach proposed by DOE and has indicated that the TM is not approved. DOE continues to work at the resolution of this problem. If the issue of active tanks advances to dispute resolution, additional schedule delays are possible.

The tanks in Building 883 may undergo closure because the building is slated for economic conversion. Impacts to the OU 9 investigation activities have not been determined; however, this issue will be actively pursued.

Technical Memoranda

Project

OU 9 - Original Process Waste Lines

TM #1

TM Title

Field Sampling Plan - Original Process Waste Lines - Volume I, Part A, Outside Tanks

TM Status

When preparation was concluded: Jan 94
Projected date of submittal to EPA/CDPHE: Mar 94
Actual date of submittal: 15 Mar 94
Date EPA/CDPHE comments received: To be determined

TM #1

TM Title

Field Sampling Plan - Volume II, Part A, Outside Pipelines

TM Status

When preparation was concluded: Aug 94
Projected date of submittal to EPA/CDPHE: Sep 94
Actual date of submittal: To be determined
Date EPA/CDPHE comments received: To be determined

Planned Work for October

- The training for Stage I Outside Tank Investigation will continue.
- The review of the modification to the IA Health and Safety Plan will continue. A corrected draft will be prepared.
- Comments on TM #1, *Volume II, Part A*, will be addressed.
- Field work for Stage I Outside Tank Investigation will be subcontracted.

- The operating procedure for tank and pipeline investigation will be finalized.
- A gamma survey of outside tanks will be conducted.
- The TM #1, *Volume I, Part A*, will be issued.
- Permits for Stage I Outside Tanks Investigation will be obtained.

Problems

The delay in the approval of the TM #1, *Field Sampling Plan - Original Process Waste Lines - Volume 1, Part A, Outside Tanks*, by the regulatory agencies has produced field activity delays.

Open Items

TM #1 has not been approved by the regulatory agencies.

2.10**OU 10 - OTHER OUTSIDE CLOSURES**

OU 10 is composed of 15 IHSSs scattered throughout the Rocky Flats Environmental Technology Site. Six of the IHSSs are located in the Protected Area, two are located in the buffer zone near the present landfill, and the remaining IHSSs are located near various buildings throughout the Rocky Flats Environmental Technology Site. The types of wastes and contaminants identified at these sites include pondcrete/saltcrete storage, diesel and fuel spills, and heavy metal contamination. A Draft and Final TM will be developed that will summarize the nonintrusive portion of the OU 10 field work. Other IHSS-specific intrusive activities are scheduled for FY 94.

OU 10 is currently being managed collectively with the other IA OUs (8, 9, 12, 13, and 14). All of these OUs are being investigated collectively because of the similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

**Scope of Work
Changes This Period** None

**Technical Approach
Changes This Period** None

IAG Milestone	Submit Draft Phase I RFI/RI Work Plan	27 Nov 91
Accomplishments	Submit Final Phase I RFI/RI Work Plan	01 May 92

**Future IAG Milestones
Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	25 Aug 94	Tolling Agreement	19 Aug 99
Submit Final Phase I RFI/RI Report	30 Jan 95	Tolling Agreement	25 Aug 99
Submit Draft Phase I Proposed IM/IRA			
Decision Document	26 May 95		26 Feb 18
Submit Draft Phase II RFI/RI Work Plan	27 Jun 95		25 May 17

**September Work Activity
Status** The survey of the remaining Global Positioning System locations was completed.

The physical parameter sample results that were shipped to an offsite laboratory in August 1994 should be available by the time the Preliminary TM is due in October 1994.

The Draft Proposed Action Memorandum which defines the scope of work for the 443 Underground Tank Removal action is being reviewed by DOE. After compiling all comments, the Final Proposed Action Memorandum will be issued for additional comments and approval by the regulatory agencies.

Work continued on the development of the Preliminary Draft TM #1. Specific issues that are still being resolved include figures, data tables and presentations, and Risk Assessment questions. The requirements of the TM for Risk Assessment are in the process of being defined. Initial review of the Preliminary Draft TM #1 was positive, and delivery of the Preliminary Draft is scheduled for October 7, 1994.

Current budget allocation decisions for the IA could impact certain activities that were originally scoped for FY 95. This includes certain stage two activities which include borehole drilling and groundwater well installation and sampling.

Technical Memoranda

A new revised schedule has been developed for preparation and delivery of the Draft and Final OU 10 Phase I Nonintrusive TM. The new dates for delivery of the Draft and Final TMs are October 7, 1994, and February 10, 1995, respectively.

Planned Work for October

- The Preliminary Draft Nonintrusive TM #1 will be delivered.
- The remainder of sample analytical data will be validated.
- Comments on the Preliminary Draft TM will be incorporated.

Problems

Current information indicates that the Rocky Flats Compliance Agreement will not be negotiated before the expiration of the Tolling Agreement on January 31, 1995. After this date, it is conceivable that DOE may begin to accrue stipulated fines and penalties associated with the remaining Table 6 IAG milestones.

Open Items

None

2.11 OU 11 - WEST SPRAY FIELD

The West Spray Field is located within the Rocky Flats Environmental Technology Site buffer zone immediately west of the 130 Trailer complex. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from Solar Evaporation Ponds 207B North and Center (contaminated groundwater in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105 acres, 38 of which received direct application of solar pond water. The RFI/RI process will entail field studies to investigate the presence or absence of hazardous constituents in soil and groundwater.

**Scope of Work
Changes This Period**

None

**Technical Approach
Changes this Period**

A flow chart was developed to assist with decision making in the field. The flow chart is consistent with OU 11 Data Quality Objectives and the Field Sampling Plan.

The proposal to extend the investigation outside of the IHSS (because of photographic evidence) was approved.

The approach to Risk Assessment TMs has been revised. After the receipt of data analysis, the Risk Assessment TMs will be delivered.

**IAG Milestone
Accomplishments**

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	02 Jan 92

**Future IAG Milestones
Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phases (combined) RFI/RI Report	20 Sep 94		19 May 95
Submit Final Phases (combined) RFI/RI Report	22 Feb 95		21 Jul 95
Submit Draft Phase II RFI/RI Work Plan	21 Aug 95		Deleted

**September Work Activity
Status**

The surface soil sampling is complete, the investigatory drilling is finished, and the high purity Germanium survey monitoring of additional areas is complete.

Technical Memoranda

Project

OU 11 - West Spray Field

TM

TM Title

TM Status

Revised Field Sampling Plan and Data Quality Objectives
Submitted to EPA/CDPHE: 31 Mar 94
Approved.

TM #1

TM Title

TM Status

Exposure Scenarios
When preparation was concluded: Mar 94 (late)
Projected date of submittal to EPA/CDPHE: 14 Dec 94
Actual date of submittal: To be determined
Date EPA/CDPHE comments received: To be determined

TM #2

TM Title

TM Status

Modeling
When preparation was concluded: 22 Mar 94 (late)
Projected date of submittal to EPA/CDPHE: 14 Dec 94
Actual date of submittal: To be determined
Date EPA/CDPHE comments received: To be determined

TM #3

TM Title

TM Status

Contaminants of Concern
When preparation is concluded or estimated to be concluded: 20 Sep 94
Projected date of submittal to EPA/CDPHE: 09 Nov 94
Actual date of submittal: To be determined
Date EPA/CDPHE comments received: To be determined

TM #4

TM Title

TM Status

Toxicity
When preparation is concluded or estimated to be concluded: 10 Oct 94
Projected date of submittal to EPA/CDPHE: 12 Dec 94
Actual date of submittal: To be determined
Date EPA/CDPHE comments received: To be determined

Planned Work for October

- The preparation of the RFI/RI Report will begin.

Problems

None

Open Items

The approval of a two-week review period by the regulatory agencies and an abbreviated RFI/RI Report continue to be unresolved issues.

The Process Improvement Proposal was only approved through the Final RFI/RI Report. The remaining sections of the proposal will be further reviewed at that time.

The Process Improvement Proposal schedules the Proposed Plan as the next deliverable. This deliverable has not been accepted by EPA/CDPHE.

2.12 OU 12 - 400/800 AREA

The 400/800 Area comprises assessment and remediation of the following 10 IHSSs within the 400/800 Area: Multiple Solvent Spills at the West and South Loading Dock Areas (IHSSs 116.1 and 116.2); Fiberglassing Areas North and West of Building 664 (IHSSs 120.1 and 120.2); Cooling Tower Ponds - northeast and southwest of Building 460 (IHSSs 136.1, and 136.2); Building 881 - Conversion Site (147.2); Radioactive Site - South Area (IHSS 157.2); Acid Leaks (2) (IHSS 187); and Multiple Acid Spills (IHSS 189).

The Phase I RFI/RI Work Plan, which includes both an Environmental Evaluation and a Human Health Risk Assessment, has been completed. Implementation of this Work Plan includes field work and sample analysis. After implementation, a Phase I RFI/RI Report will be prepared. A Phase II Investigation may be performed as necessary. An FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Based on results obtained during the assessment phase of the project, remediation may consist of development and execution of a Remedial Action Plan. This process includes review and approval by the regulatory agencies, followed by a Record of Decision, release to the public, and implementation of the plan.

OU 12 is within the IA at the Rocky Flats Environmental Technology Site and is managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

**Scope of Work
Changes This Period**

None

**Technical Approach
Changes This Period**

None

**IAG Milestone
Accomplishments**

Submit Draft Phase I RFI/RI Work Plan	08 May 92
Submit Final Phase I RFI/RI Work Plan	05 Oct 92

**Future IAG Milestones
Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	20 Apr 94	Tolling Agreement	11 Mar 99
Submit Final Phase I RFI/RI Report	15 Sep 94	Tolling Agreement	17 Nov 99

September Work Activity Status

During September 1994, asphalt sampling at anomalous locations was completed.

On September 19, 1994, DOE received the Preliminary Draft IA Surface Water and Sediment Field Sampling Plan TM for review. The TM will assess the current information available on the surface water and sediments within the IA and present a Field Sampling Plan to fill in data gaps. Review comments are scheduled for completed in October 1994.

Coordination with the 123 Laboratories to complete the laboratory high purity Germanium analysis is in progress. To date, 128 surficial soil samples have been dried, 128 have been pulverized, and 77 have been set aside to equilibrate, 82 vertical profile samples have been analyzed, and 13 rinsates have been analyzed.

Technical Memoranda

The Draft IA Surface Water and Sediment Field Sampling Plan is schedule for submittal to the regulatory agencies in November 1994.

Planned Work for October

- Comments for the IA Surface Water and Sediment Field Sampling Plan TM will be incorporated.
- The data validation will continue on the analytical results returned from the laboratories.
- The high purity Germanium analysis will continue.

Problems

None

Open Items

None

2.13 OU 13 - 100 AREA

Cleanup of the 100 Area comprises the assessment and remediation of 14 IHSSs: Chemical Storage - North, Middle, and South Sites (IHSSs 117.1, 117.2 and 117.3); Oil Burn Pit #1 (IHSS 128); Lithium Metal Destruction Site (IHSS 134); Waste Spills (IHSS 148); Fuel Oil Tank (IHSS 152); Radioactive Site - North Area (IHSS 157.1); Radioactive Site - Building 551 (IHSS 158); Waste Peroxide Drum Burial (IHSS 169); Solvent Burning Ground (IHSS 171); Valve Vault 12 (IHSS 186); Caustic Leak (IHSS 190); the Hydrogen Peroxide Spill (IHSS 191), and the Scrap Metal Site (IHSS 197).

Assessment will proceed in three steps. The first step, which has been completed, consists of preparing a Phase I RFI/RI Work Plan. The second step is the implementation of the Work Plan, in which field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. When complete, the Phase I RI Report will include both an Environmental Evaluation and a Human Health Risk Assessment. The third step is a Feasibility Study which will determine the best method to remediate the area.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a Record of Decision, release to the public, and implementation of the plan.

OU 13 is within the IA at the Rocky Flats Environmental Technology Site and is managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

**Scope of Work
Changes This Period** None

**Technical Approach
Changes This Period** None

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	15 May 92
	Submit Final Phase I RFI/ RI Work Plan	12 Oct 92

**Future IAG Milestones
Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	08 Aug 94	Tolling Agreement	06 Jan 97
Submit Final Phase I RFI/RI Report	11 Jan 95	Tolling Agreement	11 Jun 97

**September Work Activity
Status**

On September 6, 1994, DOE received a tentative Sediment Sampling and Analysis Plan that was formulated and included in the revision of the TM #1, *Addendum to the Field Sampling Plan*.

While waiting for additional utility clearances in OU 12, soil gas investigations have begun in IHSS 134 (North).

The removal of materials stored in OU 13 IHSSs is progressing.

Preparation of a Statement of Work for subcontractor support continues. The modification to the subcontractor's contract will allow work to be reprioritized to complete as much field work as possible in order to produce an optimum number of TMs by January 31, 1995.

Stage I Surficial Soil Sampling is complete.

DOE review has prompted another round of minor revisions to the modification of the procedure FO.28, Tank and Pipeline Investigation, that were completed September 16, 1994. The procedure is being reformatted to site standards.

Proposed budget restraints will affect the schedule for completion of several TMs and draft reports critical to the completion of the Draft and Final Phase I RFI/RI Reports. The schedule for the delivery of these reports is currently being negotiated with the regulatory agencies in the new Rocky Flats Cleanup Agreement. Reduced budgets will further hamper any work scheduled for completion prior to the expiration of the tolling agreement which could result in increased fines and penalties. Solutions to this issue are being pursued.

Technical Memoranda

Project

OU 13 - 100 Area

TM #1

TM Title

TM Status

Addendum to Field Sampling Plan

When preparation was concluded: Feb 94

Projected date of submittal to EPA/CDPHE: Feb 94

Actual date of submittal: 03 Mar 94

Date EPA/CDPHE comments were received: 16 May 94

A nonintrusive TM will be prepared in FY 95 summarizing

Project Status

the nonintrusive field work and recommending Stage II activities for the remedial investigation intrusive field work.

Planned Work for October

- Soil gas investigations will continue.
- TM #1, *Addendum to the Field Sampling Plan*, will be completed.
- Procedure FO.28, Tank and Pipeline Investigations, will be issued.
- The contract with the subcontractor to complete field investigations including sediment and surface water sampling will be modified.

Problems

None

Open Items

The completion and issuance of the TM #1, *Addendum to the Field Sampling Plan*.

The issuance of Procedure FO.28, Tank and Pipeline Investigations.

2.14 OU 14 - RADIOACTIVE SITES

Work at the Radioactive Sites comprises the assessment and remediation of eight IHSSs: Radioactive Site - 700 Area Site #1 and Site #2 (IHSS 131); Radioactive Soil Burial - Building 334 Parking Lot and Soil Dump Area (IHSSs 156.1); Building 444 Parking Lot (IHSS 160) and Building 664 (IHSS 161); and Radioactive Site - 700 Area Site #2 (IHSS 162); and Radioactive Sites - 800 Area which includes the Concrete Slab, Building 886 Spills; and the Building 889 Storage Pad (IHSSs 164.1, 164.2, and 164.3). In 1991, one of two Soil Dump Area IHSSs (156.2) was deleted from OU 14 and added to OU 6.

Assessment will proceed in three steps. The first step, which has been completed, consists of preparing a Phase I RFI/RI Work Plan. The second step is the implementation of the Work Plan, in which field work and sample analysis will be conducted, data analyzed, and the Phase I RI Report will be prepared. When complete, the Phase I RI Report will include both an Environmental Evaluation and a Human Health Risk Assessment. The third step is a Feasibility Study which will determine the best method to remediate the area.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase and FS of the project. This process includes review and approval by EPA and CDPHE followed by a Record of Decision, release to the public, and implementation of the plan.

OU 14 is within the IA at the Rocky Flats Environmental Technology Site and is managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

**Scope of Work
Changes This Period** None

**Technical Approach
Changes This Period** None

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	26 Jun 92
	Submit Final Phase I RFI/RI Work Plan	19 Oct 92

**Future IAG Milestones
Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	20 Dec 94	Tolling Agreement	23 Apr 97
Submit Final Phase I RFI/RI Report	23 May 95		29 Sep 97

September Work Activity Status

The Approved Work Plan has been modified to conduct surficial soils sampling separately at all the locations specified in the Work Plan as two-foot boring locations followed by intrusive activities at a later time. Locations in paved areas will be sampled according to Procedure GT.08. This is consistent with the Integrated Field Sampling Plan for the IA OUs. Unpaved areas will be sampled with the Rocky Flats Method as specified in GT.08 and as consistent with the other IA OUs.

Sampling in IHSS 160 was completed on September 16, 1994.

A Draft Document Modification Request has been issued for the OU 14 Work Plan, and field work is under way. Surficial Soil Sampling began on August 29, 1994. Field crews will optimize sample collection strategies in order to complete as much work as possible prior to the end of the FY. Soil gas investigations have also been reprioritized in order to complete as many tasks as possible before the expiration of the tolling agreement on January 31, 1995. Soil gas investigations in OUs 14 and 8 will be scheduled ahead of OU 13 because the duration of these investigations is short and will minimally impact the OU 13 schedule. Soil gas work began in OU 14 on September 23, 1994.

Technical Memoranda

The current Five-Year Plan indicates that two TMs, *Human Health Risk Assessment-Exposure Assessment* and *Human Health Risk Assessment-Modeling*, were scheduled for completion in March 1994. These tasks require rescheduling because of the integration of OUs 8, 9, 10, 12, 13, and 14. A new schedule has been developed and, currently, only nonintrusive/limited RI field work is scheduled for OU 14 in FY 94.

A nonintrusive TM which summarizes the nonintrusive field work and recommends Stage II activities for the RI intrusive field work will be prepared in FY 95.

Planned Work for October

- The surficial soils survey will be completed.
- The soil gas investigations will be completed.

Problems

None

Open Items

None

2.15 OU 15 - INSIDE BUILDING CLOSURES

OU 15 comprises of the following six IHSSs:

- IHSS 178, Building 881 - Drum Storage Area
- IHSS 179, Building 865 - Drum Storage Area
- IHSS 180, Building 883 - Drum Storage Area
- IHSS 204, RCRA Unit 45, Building 447 - Original Uranium Chip Roaster
- IHSS 211, RCRA Unit 26, Building 881 - Drum Storage Area
- IHSS 217, RCRA Unit 32, Building 881 - Cyanide Bench-Scale Treatment

Closure Plans for the IHSSs were submitted to CDPHE during 1988 and 1989. The IHSSs were also included in the IAG. During scoping meetings in April 1992 for the Phase I RFI/RI Work Plan, EPA, CDPHE, and DOE agreed to combine the Closure Plan and RFI/RI processes. In effect, the Clean Closure Performance Standard (6 CCR 1007-3 Part 265.111) will serve as the Applicable or Relevant and Appropriate Requirements for the OU 15 RFI/RI inside buildings for hazardous materials, and 29 CFR 1000.46 will serve as the Applicable or Relevant and Appropriate Requirements for the OU 15 RFI/RI inside buildings for radionuclides.

Drums containing solids and liquids were stored at the OU 15 IHSSs. Types of waste included oils, coolants, solvents containing chlorinated hydrocarbons (RCRA FO.01 and FO.02 wastes), and waste paints and metals contaminated with solvents. Hazardous constituents include chlorinated solvents, beryllium, and uranium. No known spills or releases occurred. The current focus is characterization of contamination associated with the OU 15 IHSSs inside buildings, and, if applicable, decontamination of the concrete floors and other facilities at the indoor RCRA units.

**Scope of Work
Changes This Period**

None

**Technical Approach
Changes This Period**

None

**IAG Milestone
Accomplishments**

Submit Draft Phase I RFI/RI Work Plan	01 Jun 92
Submit Final Phase I RFI/RI Work Plan	26 Oct 92
Submit Draft Phase I RFI/RI Report	25 Jul 94

**Future IAG Milestones
Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Final Phase I RFI/RI Report	04 Jan 95		04 Jan 95

September Work Activity Status

The proposal for the contract modification, which began with the Proposed Plan/Draft RCRA Permit Modification, was received and completed. A technical evaluation of the proposal is technically acceptable.

Informal comments were received from the CDPHE on the Draft Phase I RFI/RI Report.

Technical Memoranda

Project

OU 15 - Inside Building Closures

TM #1

TM Title

TM Status

Field Sampling Plan

When preparation is estimated to be concluded:

Projected date of submittal to EPA/CDPHE: 28 Feb 94

Actual date of submittal: 28 Feb 94

Date comments were received: Preliminary 17 Mar 94
(Formal 04 May 94, EPA, 07 Apr 94 CDPHE)

TM #2

TM Title

TM Status

Human Health and Risk Assessment

When preparation is estimated to be concluded:

Actual date the Final TM submitted to EPA/CDPHE:
28 Feb 94

Date comments were received: Preliminary 17 Mar 94
(Formal 04 May 94, EPA, 07 Apr 94 CDPHE)

Planned Work for October

- EPA comments for the Draft Phase I RFI/RI Report are due to be received.
- The final revision of the RFI/RI Report and Draft Proposed Plan/Modification of Colorado Hazardous Waste Permit for the Rocky Flats Environmental Technology Site will begin.

Problems

EPA comments on the Draft Phase I RFI/RI Report are over one month late. Revisions of the report will begin without the EPA comments.

Open Items

None

2.16 OU 16 - LOW-PRIORITY SITES

This assessment activity consists of preparing a No Action Justification Document for the following five IHSSs: Solvent Spill, Antifreeze Discharge, Steam Condensate Leaks (400 and 700 Areas), Nickel Carbonyl Disposal. The No Action Justification Document was approved by the regulatory agencies, and the Record of Decision process was initiated to close OU 16 as an OU at the Rocky Flats Environmental Technology Site.

**Scope of Work
Changes This Period**

None

**Technical Approach
Changes This Period**

None

**IAG Milestone
Accomplishments**

Submit Draft No Action Justification Document	04 Mar 92
Submit Final No Action Justification Document	30 July 92
Submit Revised Final No Action Justification Document	16 Oct 92
Submit Draft Record of Decision	29 Apr 94

**Future IAG Milestones
Through FY 95**

None

**September Work Activity
Status**

The Final Corrective Action Decision/Record of Decision was completed and is in the DOE approval process.

Technical Memoranda

None

Planned Work for October

If necessary, presentations will be performed regarding the Corrective Action Decision/Record of Decision for OU 16.

Problems

DOE and EG&G have not agreed on the language for the Certification of Completeness of the Administrative Record for OU 16 and, as a result, the Corrective Action Decision/Record of Decision for OU 16 has not been signed and adopted by DOE.

Open Items

The Corrective Action Decision/Record of Decision for OU 16 has not been signed and adopted by the state and DOE.

2.17 SITEWIDE ACTIVITIES

Sitewide activities include several tasks that comprises a wide variety of plans, procedures, reports, studies, and activities required by the IAG and that apply to the Rocky Flats environmental restoration activities in general. Activities include, but are not limited to, the Health and Safety Plan, Sampling and Analysis Plan, Treatability Study deliverables, Background Study Plan, Groundwater Geochemistry, Risk Assessment, IA IM/IRA, hydrological characterization, Background Soils Study Plan, Decontamination Facilities, ER Waste handling facilities, groundwater monitoring, Decontamination and Decommissioning, and Program Management Support activities.

**Scope of Work
Changes This Period** None

**Technical Approach
Changes This Period** None

IAG Milestone Accomplishments	Submit Draft Background Study Report (Water)	15 Dec 89
	Submit Draft Background Study Report (Soils)	15 Dec 89
	Submit Draft Community Survey Plan	23 Jan 90
	Submit Final Community Survey Plan	22 Mar 90
	Submit Draft Health and Safety Plan	15 Aug 90
	Submit Draft Quality Assurance Project Plan	29 Aug 90
	Submit Draft Standard Operating Procedures	29 Aug 90
	Submit Draft Plan for Prevention of Contaminant Dispersion	19 Sep 90
	Submit Draft Treatability Study Plan	21 Sep 90
	Submit Draft Community Relations Plan	01 Nov 90
	Submit Final Health and Safety Plan	12 Nov 90
	Submit Revised Background Study Report	21 Dec 90
	Submit Final Community Relations Plan	22 Jan 91
	Submit Final Quality Assurance Project Plan	01 Mar 91
	Submit Final Standard Operating Procedures	01 Mar 91
	Submit Draft Radionuclides Discharge Limits Plan	05 Apr 91
	Submit Community Relations Plan Responsiveness Summary	21 Jun 91
	Submit Final Treatability Study Plan	03 Jun 91
	Submit Final Plan for Prevention of Contaminant Dispersion	22 Jul 91

Submit Final Plan Discharge Limits Radionuclides	16 Sep 91
Submit Final Plan for Prevention of Contaminant Dispersion and Responsiveness Summary	25 Nov 91
Submit Draft Historical Release Report	08 Jan 92
Submit Responsiveness Summary for Radionuclides Discharge Limits Plan	31 Jan 92
Submit Final Historical Release Report	03 Jun 92
Submit Annual Treatability Study Report	08 Mar 93
Submit Sitewide Annual Treatability Study	14 Mar 94
Draft IA IM/IRA Decision Document	23 Mar 94
Submit Draft IA IM/IRA Responsiveness Summary	18 Aug 94

**Future Milestones
Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Final IA IM/IRA Responsiveness Summary	23 Aug 94		23 Aug 94
Submit Final IA IM/IRA Decision Document	23 Aug 94		23 Aug 94
Submit Sitewide Annual Treatability Study	14 Mar 95		14 Mar 95

**September Work Activity
Status****Sitewide Activities****Sitewide Treatability Studies**

Annual Treatability Study - The Annual Treatability Study Report is due to the regulatory agencies in March 1995 as an IAG milestone date. An Applicable or Relevant and Appropriate Requirements review is in progress. This project is ahead of schedule.

Bioremediation - Transformation studies are at a standstill until the completion of the growth curve evaluation confirms that the enrichments are ready for subculturing. The first two sections of the report, which are to be submitted to the regulatory agencies in November 1994, have been drafted. The final two sections were drafted while the data were collected in September 1994. A scope of work for FY 95 for the evaluation of the use of bioremediation to treat subsurface coolant and lathe oils in OU 2 was developed. DOE received the draft of the Fourth Quarter Summary Report for the Bioremediation Treatability Study on September 15, 1994.

Potassium Ferrate Process (Tru-Clear®) - Phase II of the Tru-Clear® Treatability Study was planned as a result of the analytical results of Phase I of the studies, which were completed on September 2, 1994. Test work for the 15 experiments planned for Phase II began on September 13, 1994, in the Treatability Study Laboratory.

Other Sitewide Operations

Industrial Area Interim Measure/Interim Remedial Action Plan - The Public Comment Period for the IM/IRA Decision Document continues. Two public meetings, the Quarterly Update and the Cities Information Exchange, were held during September 1994. Comments from these public meetings and the CDPHE are being incorporated as the comments are received. The comment period ends October 27, 1994, and comments will be incorporated into the Draft Responsiveness Summary which is due November 2, 1994.

Community Relations - A meeting with CDPHE and the Environment Rocky Flats Health Advisory Panel was held on September 13, 1994. The meeting agenda included the discussion of incineration activities and the historic chemical contaminant releases of concern from the Rocky Flats Environmental Technology Site.

Surface Water Management - Onsite Water Control Drainage Repairs and Improvements - Soil sampling requirements have been established in support of the Building 991 Flood Protection Project. This effort will support the National Environmental Policy Act document preparation and hazardous waste determination requirements.

South Interceptor Ditch Repair - On September 29, 1994, routine Surface Water Environmental Assessment development meetings started. This Environmental Assessment covers the South Interceptor Ditch Repair Project and several other Onsite Water Management Projects such as repairs to the Woman Creek Bypass and the installation of upstream gates on terminal dam outlet works.

Dam Upgrades - The Draft Geotechnical Analysis Report for Dam Upgrades (Dams A-4, B-5, and C-2) was completed on September 12, 1994, and is being reviewed by EG&G.

- Planned Work for October**
- Normal Community Relations activities will continue.
 - Comments from the public meetings and the CDPHE will be incorporated into the IA Interim Remedial Action Plan.
 - Normal Surface Water management activities will continue.

Problems None

Open Items None

SECTION 3.0 ROUTINE ENVIRONMENTAL MONITORING

The following generalized sampling schedule for Routine Environmental Monitoring is provided as requested in Section 210 of the IAG. Detailed quarterly monitoring schedules are prepared in advance and are available to EPA and CDPHE upon request from the Environmental Management Department and EG&G Rocky Flats, Inc. The schedules are lengthy, therefore, they are not reproduced here. An EPA- or State-authorized representative may make arrangements to observe field work and obtain split or duplicate samples.

3.1 SURFACE WATER AND SEDIMENTS

Each of the Surface Water Stations (approximately 20 stations) is sampled quarterly.

Each of the Sediment Stations (approximately 10 stations) is sampled quarterly.

Each surface water and sediment sample is analyzed for the following parameters:

- Contract Laboratory Program Target Compound List Volatile Organic Analysis
- Metals Contract Laboratory Program Target Analysis List and Non-Target Analysis List
- Field Parameters
- Specific Conductivity
- Dissolved Oxygen
- Major Anions
- Radionuclides
- Temperature
- Total Dissolved Solids/Total Suspended Solids
- pH
- Nutrients

Additionally, sediment samples are analyzed for Contract Laboratory Program-Semi Volatile Organic Analysis and Contract Laboratory Program-Pesticides/polychlorinated biphenyls Herbicides-619.

3.2 SOILS

Each of the soil stations (located at 1- and 2-mile radii from the site center) is sampled annually.

Each soil sample is analyzed for plutonium and americium.

3.3 GROUNDWATER

A total of 395 groundwater stations was sampled in the third quarter of 1994. Including RCRA, CERCLA, site protection, and boundary wells. A total of approximately 400 groundwater stations will be sampled in the third quarter of 1994. As of September 30, 1994, 395 of these stations have been completed. Approximately 532 water level measurements were monitored quarterly for water levels, and approximately one-third of the wells is monitored monthly for water levels. Each groundwater sample is analyzed for the following parameters:

Radiochemical Parameters

Gross Alpha
Gross Beta
Plutonium
Americium
Strontium
Tritium
Uranium
Cesium

Inorganic Parameters

Nitrate/Nitrite
Total Phosphorous
Ortho-Phosphate
Ammonia
Total Dissolved Solids
Chlorine
Fluorine
Sulfate
Carbonate
Bicarbonate
Total Suspended Solids
Dissolved Contract Laboratory Program and additional metals
Cyanide
Contract Laboratory Program Volatile Organic Constituents

Field Parameters

Specific Conductivity
Temperature
Turbidity
pH

SECTION 4. SUBCONTRACTOR IDENTIFICATION

Subcontractors being used on the Rocky Flats ER Program and the work they are performing are identified on the following list as required by Paragraph 13 of the IAG.

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
1	Assessment	Dames & Moore		CMS/FS Report	Jan 92
1	Remediation	Resource Tech.		B-891 Treatment System Operations Group, Inc. (RTG)	
2	Assessment	Woodward-Clyde		OU 2 RFI/RI Work Plan (alluvial and bedrock) and RI field work (drilling, well completion/development)	Sep 90
2	Assessment	Woodward-Clyde	Layne	OU 2 RFI/RI Work Plan (bedrock), surficial soils	Mar 93
2	Remediation	RTG		Installation and operation of the water treatment system for South Walnut Creek Phase of OU 2 IRA	Jan 91
2	Soil Vapor Extraction	Woodward-Clyde		Operation of Soil Vapor Extraction	1993
3	Assessment	CH2M Hill		OU 3 Field Work and RI Report	Apr 92
4	Remediation	HNUS	Halliburton	Demobilize	Sep 91
4	Assessment	Parsons/Eng Science	Rust I&E	Implement the Phase I RFI/RI Work Plan, includes drilling, sampling radiation surveys, etc.	Aug 92
4	Remediation	Parsons/ Eng Science		Development of IM/IRA Decision Document and conceptual design	
4	Remediation	ERM-Rocky Mountain	Geraghty & Miller	Post-closure monitoring plan	Nov 93
4	Remediation	HNUS		Develop Treatability Study for Pondcrete	Aug 94
4	Remediation	HNUS		Develop Treatability Study and Conceptual Design for Pond Sludge Processing	Aug 94
5	Assessment	ASI Blackhawk Geo Walsh & Assoc. Layne Envir. Service S. M. Stoller Adv. Terra Testing	Dames & Moore Utility Mgmt. Service	Implementation of OU 5 Work Plan (excluding EE)	Jun 92

DOE-RFFO

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
5	Assessment	S. M. Stoller		Implementation of Environmental Evaluation section of OU 5 Work Plan	Sep 92
6	Assessment	Woodward-Clyde	Lane, Ogden, Geo Envir	OU 6 RFI/RI Work Plan and Quality Assurance Addendum	Aug 92
6	Assessment	S. M. Stoller		Implementation of EE section of OU 6 Work Plan	Sep 92
7	Assessment	S. M. Stoller	Walsh & Assoc.	OU 7 revised Work Plan development and implementation. IM/IRA Decision Document development.	Nov 92
8	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
9	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
10	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
11	Assessment	S. M. Stoller		Implement the RFI field work and report writing	Jan 94
12	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
13	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
14	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
15	Assessment	ERM-Rocky Mtn.	G. S. Miller, Inc.	Implementation of the RFI/RI Work Plan	Mar 93
SW	HRR	IT Corporation	Doty & Assoc.	Prepare HRR	Feb 91
SW	Adm. Record	QuantaLex		Maintain IAG Administrative Record	Oct 90
SW	Geo. Char.	Jacobs Eng.		Well Abandonment and Replacement	Mar 93
SW	Geo. Char.	Colorado State University		Support master's thesis of Structural Geology, of Front Range Area near Rocky Flats	Nov 91

Subcontractor Identification

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
SW	Geo. Char.	S. M. Stoller		Prepare 1992 Annual RCRA Report and Addendum	Jan 93
SW	Geo. Char.	Colorado School of Mines		Masters-level training program in Engineering Science and Engineering	Aug 92
SW	Geo. Char.	Woodward-Clyde		Support for the Soil Water Monitoring System	Feb 93
SW	Geo. Char.	Colorado State University		Sequential Extraction	Apr 92
SW	Geo. Char.	University of Colorado		Soil Monitoring Vadose Zone	Jun 92
SW	Geo. Char.	S. M. Stoller		Spatial Analysis/Computer Support	Mar 93
SW	Geo. Char.	Woodward Clyde	SAIC/Wright, Water		Jan 93
SW	Monitoring	IT Corporation		Analytical Services for groundwater, surface water, and sediment	Jul 90
SW	QA	SAIC		Develop and implement QA program and field operations oversight	Dec 90
PM	Support	S. M. Stoller		Program Management Support	Oct 92
PM	QA Support	SAIC		Provide QA/QC support to ER Program	Nov 92

ACRONYMS

CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMS	Corrective Measures Study
DOE	U. S. Department of Energy
EPA	U. S. Environmental Protection Agency
ER	Environmental Restoration
FS	Feasibility Study
FY	Fiscal Year
IA	Industrial Area
IAG	Interagency Agreement
IHSS	Individual Hazardous Substance Site
IM	Interim Measure
IRA	Interim Remedial Action
IRAP	Interim Remedial Action Plan
OU	Operable Unit
RCRA	Resource Conservation and Recovery Act
RFFO	Rocky Flats Field Office
RFI	RCRA Facilities Investigation
RI	Remedial Investigation
TM	Technical Memorandum